THE APPLICATION OF THE THEORY OF PLANNED BEHAVIOUR AND STRUCTURAL EQUATION MODELLING IN TAX COMPLIANCE BEHAVIOUR: A NEW ZEALAND STUDY

A thesis submitted in fulfilment of the requirements for the

Degree of

Doctor of Philosophy in Taxation

Department of Accounting and Information Systems

at the University of Canterbury

by

Martha Smart

University of Canterbury

2012

Table of Contents

List of Tables

List of Figures

Acknowledgments

The completion of this dissertation would not have been possible without the support, encouragement and guidance of my academic supervisors, Professor Adrian Sawyer and Associate Professor Andrew Maples. Their willingness to discuss or meet at short notice, despite their busy schedules, has been much appreciated. Apart from their intellectual guidance, I am deeply grateful for their patience and encouragement during this long journey, especially when I was unable to keep to agreed deadlines due to my work commitments, and in particular after the Christchurch earthquakes when I despaired of ever completing this research.

It is not possible to complete a doctoral thesis without the help of a number of individuals. Firstly, I wish to express my gratitude to Associate Professor Annette Mills for her useful feedback during the presentation of my research proposal and for providing much needed support in using the PLS-Graph software. I am also indebted to Professor Wynn Chin from the University of Houston for his workshops on Structural Equation Modelling with PLS-Graph, and for reviewing my survey results and the helpful comments offered.

Special thanks also goes to the Librarians at the Central and Law Libraries and their staff who assisted, during what was a challenging time for them, in locating much needed resources outside the Canterbury region after the earthquake. I am also grateful to Barbara Doubleday for her proof-reading expertise. Also, it would not be possible to undertake an empirical research without the assistance of participants and therefore I am equally grateful to the New Zealand Institute of Chartered Accountants and the New Zealand Law Society for randomly selecting members to participate in this survey.

Finally, without the support of my family, I may have given up this long and sometimes arduous journey, especially after the Christchurch earthquakes destroyed a significant portion of my previous work. Special thanks therefore goes to my husband, Ken Smart, who refused to let the earthquakes defeat me, and who kept me company during the many late nights I worked on my thesis. I also appreciate my three sons, Dudley, Marcus and Graham, for sacrificing their well set-up networked games room, after my office space at the University was damaged in the earthquakes. Special thanks must also go to my sister Margret Gomez and niece Sharon Rozario for their assistance in reviewing the final draft of this thesis, and my mother for being a role model in the face of adversity. I would also like to acknowledge the University of Canterbury for funding my attendance at the Australasian Tax Teachers Association (ATTA) Conference in 2011 at which I received the Best PhD Presentation Award (Compliance Stream).

Abstract

The Theory of Planned Behaviour (TPB) has received considerable attention in the behavioural literature, but not in the tax compliance domain. The key purpose of this study is to determine the influence of selected tax compliance variables on tax compliance behaviour. The secondary objectives are to explore the applicability of the TPB in predicting and explaining tax compliance behaviour, and to provide justification for the application of Structural Equation Modelling (SEM) employing the Partial Least Squares (PLS) statistical software or PLS-Graph (which has not been widely used in tax compliance research). The results provide evidence supporting the use of PLS-Graph in undertaking SEM analysis in tax compliance research, especially when smaller samples are involved and the data collected may not be normally distributed. This study also demonstrated the wide applicability of the TPB, including its application in tax compliance research.

This study modified and extended the standard TPB behavioural model with the inclusion of a number of economic and noneconomic constructs. Most of the constructs used for this study are grounded in a number of theories: Deterrence Theory; Procedural Justice Theory; and Motivational Posturing Theory; in addition to the TPB. Data to test the research hypotheses was collected using a mail and a web-based survey.

The results of this study suggest that noneconomic variables, such as beliefs and attitudes, are good predictors of tax compliance behaviour. Consistent with the majority of studies, the most influential factor in predicting and explaining tax compliance behaviour (through the mediating effects of behavioural intention) is attitude towards the behaviour. Other factors such as personal, social and societal norms were also significant predictors of tax compliance behaviour. Perceived behavioural control was only significant for the taxpayers but not for the tax agents. In contrast, perception of the tax authority was significant for New Zealand tax agents, but not for taxpayers. The results also suggest that tax compliance behaviour is complex, and different determinants of compliance behaviour affects different sub-groups of taxpayers differently. The results lend further support to the literature that indicates that taxpayers are not a homogeneous group. This study also found that taxpayers and tax agents generally perceive tax noncompliance as less serious relative to a number of other similar civil offences. This perception may explain why respondents (from both sample groups) who were penalised for noncompliance felt that the penalties imposed were harsh, unfair and excessive.

Overall, the current study illustrates the importance of incorporating noneconomic variables comprising beliefs, attitudes, and norms, with widely used economic variables such as penalties and other enforcement tools, for achieving an optimal compliance strategy.

CHAPTER 1
INTRODUCTION AND BACKGROUND

1.1 INTRODUCTION - A BRIEF HISTORY OF TAXATION

The origins of taxation can be traced as far back as biblical times.[1] Historical records indicate that various forms of taxes were levied as far back as 1700 B.C. and include those levied on income and property. In addition, a form of poll tax was also imposed on individuals. During 1700-1300 B.C. a tax of a fifth (20 percent) of the yield of property was levied on the Egyptians under the ruling Pharaoh's authority (see Genesis 47:26, quoted in Jose & Moore, 2002) since a fifth of all income (20 percent) produced by the Egyptians was considered to belong to the Pharaoh. The Pharaohs also imposed taxes on property (see II Kings 23:35, quoted in Jose & Moore, 2002), which were based on the value of the property, and were quite distinct from tax on the yield from the land (Jose & Moore, 2002).

Although taxes of some form have been around since biblical times, the earliest instances of a general income tax were those levied in France in 1793, followed by Great Britain in 1799. Prior to 1799, taxation in Great Britain was a haphazard affair and was usually associated with some form of national emergency (Sabine, 2002). William Pitt the Younger, who served as prime minister from 1784-1801, introduced the Income Tax Act of 1799, which was the first modern English attempt to impose a general income tax (Sabine, 2002). Taxpayers made their own calculation of their tax liabilities and were not required to specify the sources of their income. Further, the law did not allow officials to examine taxpayers' records, which created widespread tax evasion (Coffield, 1970).

New Zealand's tax system was developed from adopting and adapting many of the practices of Great Britain, which include the Rule of Law and other key constitutional documents or conventions which define the rights of the citizen and the state (Vosslamber, 2010). The first form of tax levied was customs duties, which was introduced in 1841 (Oliver & Williams, 1992). The Land Tax Act 1878 was the first New Zealand statute which levied a tax at a flat rate on unimproved land, but due to its unpopularity was repealed and replaced in 1879 by a property tax, enacted by the Property Tax Act 1879, which levied a flat tax rate on both real and personal property (Cunningham & Casey, 1942). The introduction of this tax saw the establishment of a tax administration body, the Land Tax Department, which can be traced to the present day Inland Revenue Department (IRD). Over the years, the tax base has been widened, and in 1891 the Land and Income Assessment Act 1891 was introduced,

[1] Information on the state of taxation during biblical times was taken from a paper developed by Jose and Moore (2002) which examined the development of taxation from the Bible.

within which taxation was extended to include income levied at graduated rates on individuals (Cunningham & Casey, 1942). One of the aims of introducing the progressive or graduated land tax was to also break up large land holdings, rather than to solely increase revenue (Reeves, 1911).

During the early part of the twentieth century customs and excise duties were still the major source of revenue for New Zealand, although income tax was becoming increasingly significant. The land tax meanwhile had begun to decline in importance as a source of revenue. In 1924, a Royal Commission on Taxation was appointed to inquire into the taxation of land and income (Gibbs, 1936). The Commission reported that the graduated income tax rate was detrimental to enterprise and one of the recommendations was for a more comprehensive base for income tax. The depression that followed in the 1930s saw increased expenditure in the social security area with a corresponding increase in taxation. During this period a range of other taxes were introduced (for example, taxes or duties on entertainment and film hire). Expenditure taxes were also increasing in importance, making up more than half the tax revenue collected. Source deductions for income tax were introduced in 1958, in order to match the period of income earned with the period of payment made. In addition, in 1958 dividends received by taxpayers became liable to ordinary income tax, which also ensured that companies declared the dividends paid to their shareholders. This was followed in later years by a number of newer taxes, for example, the non-resident withholding tax (New Zealand Taxation Review Committee, 1967).[2]

In the 1960s another comprehensive review of the tax system was undertaken by a committee of independent experts known as the Ross Committee (New Zealand Taxation Review Committee, 1967). The Committee was critical of the tax system in its current form, noting that the system had become outmoded and cumbersome, while the incidence of tax had not been adjusted to meet changing economic circumstances (New Zealand Taxation Review Committee, 1967). The key recommendation was for a new structure and scale of tax on individual income, which would provide substantial relief from direct taxation for the majority (New Zealand Taxation Review Committee, 1967).

In 1976 the Land and Income Assessment Act 1891, which had been consolidated in 1900, 1908, 1916, 1923, and 1954,[3] had undergone a major change. The Land and Income Assessment Act 1976 was rewritten as two Acts, with one emerging as the Income Tax Act 1976 and the other as the Land Tax Act 1976 (Mancer, 1988). In addition, the Inland Revenue

[2] Most of the information in this paragraph was sourced from New Zealand Taxation Review Committee (1967).
[3] Further consolidations occurred over the years, for example in 1994, 2004, and 2007.

Department Act 1974 set up the IRD and contains some administrative provisions relating to various taxes collected by the department. It also set up the Taxation Review Authority (Mancer, 1988), now governed by the Taxation Review Authority Act 1994.

The Report of the Task Force on Tax Reform (also known as the McCaw Report) which was released in 1982 resulted in significant changes to the tax system. There was a major shift in the incidence of taxation, a shift from direct taxation to indirect taxation and a reduction in the high marginal tax rates of personal taxation. The report also suggested addressing the legal loopholes being exploited by taxpayers, which would also achieve greater equity among taxpayers in the tax system.

In the 1980s New Zealand went through one of the most radical tax reform programs ever introduced by a Western government (Tax Working Group, 2010). The top marginal rate of income tax was reduced from 66 percent to the current 33 percent.[4] The corporate tax rate was reduced from 48 percent to 33 percent (and gradually reduced to 30 percent and currently is at 28 percent). Further, the multi-rate wholesale tax was replaced by a value added tax (a goods and services tax) at a rate of ten percent, which was subsequently increased to 12.5 percent and then to 15 percent (as of 1 October 2010). The reform program concerned the broadening of tax bases and a move towards flatter tax-rate scales. By the end of the 1980s and early 1990s, the New Zealand tax system was regarded as one of the least distortionary in the OECD and the tax rates were considered to be internationally competitive (Tax Working Group, 2010).

The Tax Review of 2001 (also known as the McLeod Report) was tasked with reviewing the tax system and recommending any required structural changes (McLeod et al., 2001). The Tax Review was required to focus on determining whether the New Zealand tax system is adequate for New Zealand's current needs, focusing on: the level of tax; the appropriate bases for tax; the detailed definition of those bases; and the rates of tax that should apply (McLeod et al., 2001). In contrast to the McCaw Report some twenty years ago which recommended radical changes, the McLeod Report recommended that there was no need for any radical restructuring of the tax system. The review found that the tax system generally compared favourably with tax systems of other countries.

However, over the years, a number of changes in New Zealand, including the effects of increasing globalisation and international tax trends have eroded its effectiveness (Tax Working Group, 2010). As a result the latest tax review carried out by the Tax Working

[4] The tax rates increased to 39 percent in April 2000, followed by a reduction to 38 percent in April 2009, and a further reduction to 33 percent on 1 October 2010.

Group (2010) recommended a total reform of taxes. One of the recommendations made was to align the top personal and corporate income tax rates with the trust tax rate in order to improve the overall integrity of the tax system.[5]

The earliest form of noncompliance in New Zealand was avoidance of customs duty imposed under the Customs Ordinance in 1840 (Oliver & Williams, 1992). The long coastline of New Zealand provided opportunities for goods to be traded illegally, thereby avoiding customs duties, which would otherwise be due to the Crown and also made it costly and difficult to police all illegal trading activities. Further, the cost associated with the Crown's enforcement activities appeared to absorb a significant part of the revenue collected (Sinclair, 1980). This suggests that noncompliance was a problem in New Zealand as far back as the 1840s, with the introduction of the customs duties.

Taxes are important for countries where a large proportion of government is funded by the taxes collected by tax authorities; however, most tax authorities have a limited budget (Chung & Trivedi, 2003). It is evident from prior research that the cost of enforcement continues to be relatively high (for example, Hartner et al., 2008). Consistent with these findings, enforcement measures are also likely to be costly for New Zealand, which highlights the importance of encouraging voluntary compliance.

The problem of noncompliance is an on-going concern internationally and poses a challenging problem for policy makers, tax authorities and ultimately for society (McKerchar, 2001). Statistics for the 2006 year reveal that the average size of the shadow economy was: 38.7 percent for the 98 developing countries included in the study; 38.1 percent in 21 Eastern European and Central Asian (mostly transitional) countries; and 18.7 percent in 25 high income OECD countries (Schneider, 2011). For the 2006 income year, the level of tax shortfall reported for the United States was estimated at around USD450 billion (equivalent to NZD693 billion based on the 2006 exchange rate).[6] The above estimates parallel those of Alm and Embaye (2011),[7] who found the estimated unweighted average size of the shadow economy across all countries, and across all years, to be 35.5 percent of the GDP.[8]

[5] The current top personal, corporate and trust income tax rates are 33 percent, 28 percent and 33 percent, respectively.

[6] Reported on 6 January 2012 at http://www.irs.govt/newsroom/article/0,,id=252038,00.html. Historical exchange rates found at http://www.x-rates.com/d/NZD/USD/hist2006.html.

[7] Quoted in Alm (2012, p.57).

[8] In terms of individual groups of countries, the size of the hidden economy was 47.7 percent for "low income" countries, 36.7 percent for "lower middle income" countries, 25.9 percent for "upper middle income" countries, 16.2 percent for "high income, non-OECD" countries, and 14.7 percent for "OECD" countries.

In New Zealand the tax gap[9] is estimated to be around $7 billion a year, with the shadow economy making up 12.4 percent of New Zealand's gross domestic product (Francis & Field, 2011).[10] This represents a significant loss of revenue for the New Zealand Government. In almost a decade, in absolute terms the tax shortfall had doubled in size providing further evidence that tax noncompliance is a continuing problem for the New Zealand tax authority.[11]

The old penalties regime in New Zealand dates back to 1916 and over the years a number of major changes and new rules have been added in an ad hoc manner (Inland Revenue, 1996). A number of weaknesses were identified in the old penalties regime which include: no direct penalties to address specific forms of noncompliance; inconsistency in the manner the legislation was applied between different district offices and interpretation by different IRD staff; and the Commissioner of Taxation had excessive discretion in determining the quantum of the penalty, up to 300 percent (McLisky, 2011). Penalties were also imposed by multiple sections of the Inland Revenue Acts.[12] These concerns resulted in a proposal to review the penalties legislation in the Inland Revenue Acts, leading to the release of two discussion documents. The first discussion document identified and outlined the shortcomings of the existing legislation and included a broad proposal for a new penalties framework (IRD, 1994). A second discussion document provided detailed proposals and a copy of the draft legislation (IRD, 1995). The legislation was adapted from the penalty rules introduced by the Australian Tax Office (ATO), indicating that New Zealand was a follower and not a leader in introducing the new rules. Nonetheless, the process involved extensive consultation with most key stakeholders.

The new Compliance and Penalties Regime (CPR) was introduced to take effect from the 1997/1998 income year. The key contributions of the CPR are that the legislation: provides clear guidelines on the standards expected of taxpayers; sets out the purpose of the legislation; provides guidelines on the application of appropriate penalties for specific forms of noncompliance; and explains the consequences of noncompliance. Sections 141A to 141E of Part IX of the Tax Administration Act 1994 (TAA 1994) sets out the civil penalties, whereas sections 143, 143A and 143B are the main criminal penalties legislation. Civil penalties were

[9] The tax gap refers to "the difference between what taxpayers should pay and what they actually pay on a timely basis" (IRS Press Release IR-2005-38, 29 March, 2005), retrieved from www.irs.gov/pub/ird-utl/tax_gap_facts_figures.pdf.

[10] The tax gap figures were published by the International Tax Justice Network and reported by Fairfax NZ News, see http://www.stuff.co.nz/business/money/6065508/Cash-jobs-crime-drive-black-economy.

[11] In 1994 the tax gap was estimated to be around $3.2 billion (Committee of Experts, 1998).

[12] Penal tax was provided under: section 369 and section 420 (in respect of PAYE tax); section 378O (relating to family support credits); section 394N (imputation penalty tax), and section 394ZZG (dividend withholding payment penalty tax) under the Income Tax Act 1976. In addition, sanctions were also provided for in section 67 of the Goods and Services Act 1985.

designed to encourage future compliance whereas the criminal penalties were intended to deter bad conduct without punishing good conduct (McLisky, 2011).

Deterrence has been the most widely utilised policy instrument of choice used by most tax authorities to deter noncompliance (Schneider, 2011). Consistent with this trend the IRD has relied on deterrence as its main policy tool for reducing noncompliance. This is illustrated by the introduction of a comprehensive penalties regime, the CPR, which took effect from 1 April 1997. However, with a tax gap estimated at $7 billion a year and only $832 million recovered from audit activities (approximately 12 percent of the estimated tax gap), the efficiency of enforcement as a policy tool to deter noncompliance comes into question.[13] Further, a number of studies have acknowledged that enforcement is costly, and that most tax authorities have limited resources to address the scale of noncompliance in their respective tax jurisdictions (for example, McKerchar, 2001; and Frey, 2003). There is therefore a need to find alternative approaches to encourage and improve the level of compliance.

Recently, the IRD began trialling a new compliance strategy (Cooperative Compliance), which attempts to enhance the relationships between IRD, taxpayers and tax intermediaries. The objective of this initiative is to use it as a tool to reduce noncompliance by managing risk.[14] However, at the time of writing, this strategy is aimed at large corporates, and although the potential looks promising, the impact of this on compliance is yet to be tested.

The IRD's attempt at looking at alternative approaches to encourage compliance is a positive step taken by the tax authority. This is consistent with calls from a number of researchers, including Schneider (2011), who contends that while deterrence policy is well-founded from a theoretical point of view, the empirical evidence on its success tends to be weak. Further, Schneider (2011) emphasises the importance of tax morale on compliance behaviour, noting that compared to the impact of tax morale (or noneconomic variables), deterrence is quantitatively less important. Consequently, there is an increasing need for tax researchers to focus on noneconomic determinants of tax compliance, rather than rely on the traditional models of tax compliance, in order to better understand and address noncompliance in the current tax environment.

[13] IRD Annual Report retrieved from http://www.ird.govt.nz/resources/1/8/187dfa8048ab122ea8b4bd6425fa4360/ar-2011.pdf.

[14] Large Enterprise Update, Number 10, February, 2010, retrieved from http://www.ird.govt.nz/aboutir/newsletters/corporates-contact/2010/large-enterprises-2010-02.html#04.

1.2 BACKGROUND TO COMPLIANCE RESEARCH

A large volume of research over the last four decades has examined the reasons for taxpayers' noncompliance with the tax laws (for example, Roth et al., 1989; Andreoni et al., 1998; Niemirowski et al., 2001; and Alm, 2012).[15] Kirchler (2007) observes a significant increase in tax compliance research over the last few decades. However, despite the significant increase, Kirchler (2007) comments that most research continues to be based on the economic model of tax compliance, albeit with some modifications.

The genesis of the Economic Deterrence Models is in Becker's (1968) Theory of Crime, which relies on the theory of a rational individual who weighs expected utility against expected costs (Allingham & Sandmo, 1972; and Srinivasan, 1973). The traditional approach in the tax compliance literature, therefore, tends to focus mainly on the direct incentives, which include the probability of audit, the probability of detection, and the severity of penalties imposed for detected shortfalls. The message this gives to tax authorities is that tax noncompliance can be reduced and managed by either increasing the penalties imposed for any shortfalls, or by increasing administrative expenses (that is, audit rates, which in turn will increase the probability of detection). However, over the years, the Economic Deterrence Models have received increasing criticism from researchers, whose main contention is that the models predict too much tax evasion and too little compliance behaviour, and therefore do not entirely explain tax compliance or noncompliance behaviour (Graetz & Wilde, 1985; Alm et al., 1992; Wallschutzky, 1993; Feld & Frey, 2002; Kirchler, 2007; and Slemrod, 2007). Torgler (2007) observes that in many countries the level of deterrence is too low to support the high degree of tax compliance.

One key concern that has been raised over the years, and is still being raised in research since Allingham and Sandmo's (1972) seminal paper, is deterrence. It has been continually debated whether deterrence alone encourages compliance. The premise of most prior research on compliance that included a measure of deterrence is that: increased levels of deterrence will lead to increased compliance by taxpayers because of their fear of being penalised for noncompliance. However, in proving this relationship, the research has still been indecisive as the overall outcome from past research is still inconclusive (for example, see Richardson & Sawyer, 2001).

As a result, other hybrid models (for example, Social Psychology and Fiscal Psychology Models) were introduced, which include a range of economic as well as social variables, with

[15] A historical overview of tax compliance research over the last three decades is presented by Niemirowski et al. (2001).

tax morale being one of the newer variables introduced (McKerchar, 2001).[16] Tax morale has yet to be clearly defined, with various researchers offering slightly different definitions. However, there is clear consensus that tax morale refers to noneconomic variables such as feelings of guilt, sense of civic duty, and moral and ethical values (Kirchler, 2007; Kornhauser, 2007; and Torgler, 2007).

Tax morale was first introduced in the 1960s, and was based on attitudes related to tax compliant and noncompliant behaviours (Schmölders, 1959). However, tax morale was rarely used in tax compliance research until after the 1990s when interest in tax morale began to emerge. Further studies followed, which emphasised the relevance of integrating tax morale into tax compliance models to explain compliance behaviour (Schmölders, 1959; Andreoni et al., 1998; Torgler, 2007; and Kirchler, 2007). Richardson (2006) examined the relationships between the determinants of tax evasion across 45 countries, and found that noneconomic determinants, such as behavioural determinants, have a strong influence on tax evasion behaviour.

In summary, recent studies have demonstrated the relevance of integrating non-economic and economic variables for a more comprehensive tax compliance model which would be capable of better explaining tax compliance behaviour.

1.3 OBJECTIVES OF THE RESEARCH AND THE RESEARCH QUESTIONS

The main purpose of this study is to examine selected determinants of tax compliance behaviour, within Fishbein and Ajzen's (1975; 2010) Theory of Planned Behaviour (TPB) framework. It also seeks to test whether a compliance model based on the TPB is able to predict tax reporting decisions made by three distinct stakeholders of the tax system, namely: taxpayers, accountants (for the purposes of this thesis referred to as tax agents), and tax lawyers.[17] Based on the TPB, three unobservable influences were examined: the influence of attitudes; the influence of relevant referents; and perceptions of behavioural control. Further, the TPB based research model was extended with the inclusion of a further five unobservable influences: perception of the tax authority; perception of the tax system; societal norms (prevalence of compliance or noncompliance); and the perceived injustice (or justice) of the CPR; together with perception of the effectiveness of the regime.

[16] McKerchar (2001) provides a useful discussion on three commonly used models in tax compliance research: Economic Deterrence Models, Social Psychology Models and Fiscal Psychology Models.

[17] For the purposes of this study the term "tax agent" is used to describe members of the New Zealand Institute of Chartered Accountants.

Overall, the theoretical model developed for this study will provide evidence of the applicability or relevance of the TPB in tax compliance research, and provide interested parties with a better understanding of the effects of individuals' beliefs, attitudes and norms on tax compliance. The wider research objective stated here is addressed by the following specific questions:

1. To what extent can the TPB be used successfully in tax compliance research?
2. To what extent do attitudes based on legal sanctions and non-legal sanctions (or tax morale) influence behavioural intentions?
3. To what extent do social norms and societal norms influence intentions to comply (or not comply) with individuals' tax obligations?
4. To what extent does perceived control over tax compliance (or noncompliance) behaviour directly influence intentions and behaviours, respectively?
5. To what extent do perceptions of the tax authority and tax system influence intentions and tax compliance behaviours?
6. To what extent do the effectiveness and procedural fairness attributes of the CPR affect attitudes towards compliance (or noncompliance), and tax compliance behaviour, respectively?
7. To what extent does the social distance, placed by individuals, between individuals and the tax authority influence tax compliance behaviour?

In response to calls for using different methodologies to investigate tax compliance behaviour, the secondary objective of this study is to apply Structural Equation Modelling (SEM) analysis with Partial Least Squares (PLS), a path modelling technique, together with the application of PLS-Graph, to analyse the survey data. The SEM approach, unlike the other widely used methods (such as multiple regression, multivariate analysis of variance and factor analysis) which can only examine a single relationship at a time, combines factor analysis and multiple regression analysis which enables the investigation of a series of dependent relationships (Hair et al., 2006). To date, no other techniques enable the assessment of both measurement properties and at the same time test the key theoretical relationships in one technique (Hair et al., 2006). Most studies applying SEM have used the covariance-based methodology (found in software such as LISREL, AMOS and EQS),[18] whereas the PLS-Graph software used in the current study is based on PLS methodology.[19] To the best of the

[18] LISREL, AMOS and EQS are software used for SEM analysis, which are all based on the covariance approach.
[19] A detailed discussion on the differences between the covariance and PLS approach is presented in Chapter 5.

author's knowledge, PLS-Graph has been used in only one recent tax compliance study.[20] The aim is to introduce an alternative methodology to analyse tax compliance data, and a model that is capable of predicting compliance behaviour, which does not rely on a normal distribution, or on a large sample size.[21]

A related objective is to determine if taxpayers view noncompliance as a serious offence, relative to other similar civil offences, and whether this view has any effect on their compliance behaviour. The final objective of this study is to examine survey respondents' own views and experiences of being subject to the CPR. This will provide a useful insight into the effects of imposing penalties on noncompliant taxpayers, as prescribed by the CPR, and how this affects their future intentions to comply.

In order to address the above research questions, the relevant areas of literature within the domain of tax compliance behaviour were reviewed, including literature on the TPB. The relevant theories underlying the research variables were also reviewed. Specific questions arising from the research objectives were developed into a number of hypotheses. A survey instrument was then developed to capture the responses used to address the hypotheses.

In summary, this study rests on the assumption that tax compliance behaviour can be explained as a process in which a broad range of beliefs, attitudes, values and other aspects of tax compliance behaviour generally may contribute towards determining compliance behaviour. The TPB has the capability of integrating all these measures or variables including normative (civic duty, guilt feelings and moral values) and self-interested deterrence concepts (fear of detection and punishment, and the severity of penalties) into one integrated causal model.

1.4 DEFINITIONS OF TAX COMPLIANCE AND RELATED TERMS

In order to fully understand the research model developed for the current study, a brief description of the underlying theory, together with the constructs used in the model, is presented in this section. The following discussions include the definitions of tax compliance behaviour, and the various terms, or constructs used in the research model.

[20] This study was reported in two parts, the first part in 2009 followed by the second part in 2011 (Saad, 2009; 2011).

[21] A small sample size and data that are not normally distributed are commonly associated with survey research.

1.4.1 Tax Compliance and Noncompliance

The definition of noncompliance clearly distinguishes between tax avoidance and tax evasion. Tax avoidance involves attempts by legal means to prevent or reduce a tax liability which would otherwise be incurred by taking advantage of some loopholes in the tax law (Webley et al., 1991; Wenzel, 2002; and Murphy, 2010). Essentially, tax avoidance is associated with legal measures adopted to reduce a taxpayer's tax liability (James & Alley, 2002). New Zealand has largely adopted a purpose test to establish avoidance, that is, "tax avoidance will be established if and to the extent that an arrangement displays a purpose (or if there is more than one purpose, a non-incidental purpose) of tax avoidance" (Sawyer, 1996, p.484).

Tax evasion, on the other hand, is generally considered to be illegal and involves acts of commission or omission (Webley et al., 1991; Sawyer, 1996; and Wenzel, 2002). A recent review of the literature identified a number of characteristics associated with tax evasion which is necessary in order to establish the presence of tax evasion: knowledge; deliberate act; illegal act; failure to comply with the tax law; element of concealment; recklessness; disregard for the tax system; and falsification of documents (Wu, 2012). Wu (2012) contends that 'knowledge' and 'deliberate act' are the more important factors in describing tax evasion.

A review of prior tax compliance research revealed that the terms 'noncompliance' and 'compliance' were commonly used to describe tax reporting behaviours. In a tax context, noncompliance refers to the intentional or unintentional failure of taxpayers to comply fully with their tax obligations (Webley et al., 1991; McKerchar, 2003a; and Kirchler, 2007). This indicates that noncompliance is used as a neutral term to refer to both intentional and unintentional noncompliant behaviour, although they are both distinct behaviours. Intentional noncompliance occurs when a person, fully aware of his or her obligations under the tax laws, deliberately chooses not to comply with their obligations. Conversely, unintentional noncompliance occurs when a person inadvertently does not comply with the tax laws, which is a result of a non-deliberate decision (McKerchar, 2003a).

The general definition of noncompliance, such as the one provided by Roth et al. (1989), clearly suggests that noncompliance can arise from both an underpayment and an overpayment of tax (Burton, 2008). Overpayment was found in a number of taxpayers' returns reviewed by the Internal Revenue Service (IRS) in the 1980s (Roth et al., 1989). Overpayment of tax (over-compliance) occurs when a person does not comply with a legal obligation which results in an advantage to the tax authority, whereas underpayment (under-compliance) occurs when a person does not comply with a legal obligation which results in a

disadvantage to the tax authority (Burton, 2008). Bobek et al. (2007) offer some reasons as to why some taxpayers over-comply, including: uncertainties as to their tax obligations; reducing anxiety; and/or enjoyment of getting a refund.[22] Some over-compliance may be the result of the IRD's Pay As You Earn (PAYE) deduction tables which are based on the income for a whole year. Overpayments may occur if during an income year a taxpayer moves from a higher income tax bracket to a lower tax bracket (or vice versa), or if a taxpayer derived salary and wages for only part of the year.[23]

It therefore follows that noncompliant taxpayers are those who do not comply with all aspects of their tax obligations, either intentionally or unintentionally, and includes those who over-comply. Tax authorities (for example, the IRD) do not consider those who overpay what they legally owe in taxes as noncompliant taxpayers, which effectively penalises compliant taxpayers (Burton, 2008). A recent Taxation Bill's proposal would require taxpayers who choose to file a tax return (seeking a refund) to also file returns for the previous four tax years.[24] This has the potential of reducing the number of taxpayers who may otherwise request a refund in the years they believe they have overpaid. For lower levels of tax offences, the CPR also does not differentiate between taxpayers who had intentionally underpaid their taxes with those who had underpaid their taxes unintentionally. For example, section 141A of the TAA 1994 (offence for not taking reasonable care) has the potential of imposing the same level of penalties on taxpayers irrespective of whether the 'mistake' was deliberate or unintentional, due to the low level of threshold and the difficulty in proving that the shortfall was the result of a deliberate act (or otherwise).

One of the earlier and more comprehensive definitions of tax compliance, which is widely cited in the literature, was developed by Roth et al. (1989, p.2), who defined tax compliance as:

> "Compliance with reporting requirements means that the taxpayer files all required tax returns at the proper time and that the returns accurately report tax liability in accordance with the Internal Revenue Code, regulations, and court decisions applicable at the time the return is filed."

The above definition seems to include taxpayers' reporting and filing responsibilities, the timing of the required actions, and the calculation of the correct amount of tax liability based

[22] Taxpayers may get a refund only if they are aware they have overpaid and make a claim accordingly.

[23] The PAYE tables are based on salary levels earned in one income year.

[24] Taxation (Livestock Valuation, Assets Expenditure, and Remedial Matters) Bill (64-1), – First Reading as referred to the Finance and Expenditure Select Committee, 29/11/12, retrieved from http://www.parliament.nz/en--NZ/PB/6/9/b//OODBHOH_BILL11625_1-Taxation-Livestock-Valuation-Assets-Expendituer.htm.

on the applicable tax laws. This definition appears to provide some clearer guidelines with regard to a taxpayer's responsibilities with respect to his or her tax obligations. The above definition, however, does not distinguish between intentional and unintentional compliance.

James and Alley (1999) re-examined the meaning of tax compliance, and found the existing definitions to be too narrow for adequately capturing the concept of tax compliance, and offered a wider definition. Tax compliance was defined by James and Alley (1999, p.10) as:

> "The willingness of individuals and other taxable entities to act in accordance within the spirit as well as the letter of tax law and administration, without the application of enforcement activity."

The definition comprises compliance with the spirit as well as the letter of the law and voluntary compliance without the threat of enforcement. James and Alley (1999), however, did not consider the definition comprehensive enough, or an accurate description of compliance behaviour. Subsequently, James and Alley (2002, p.20) proposed a more comprehensive definition, in which tax compliance is viewed as a continuum of definitions, which:

> "…ranges from the narrow law enforcement approach, through wider economic definitions and on to even more comprehensive versions relating to taxpayer decisions to conform to the wider objectives of society as reflected in tax policy."

The above definition attempts to cover the wide range of noncompliant behaviour: degree of noncompliance; voluntary and compulsory behaviour; intentional and unintentional behaviour; a timing dimension (with respect to tax payments); and behaviour associated with the spirit as well as the letter of tax law and administered without any enforcement activity (James & Alley, 2002). Research also distinguishes between two types of compliance: those who voluntarily comply and those who comply because of compliance activities by the tax authorities (James & Alley, 1999). Arguably, if taxpayers comply only because of threats and/or harassment from the tax authority, this would not constitute proper compliance (James & Alley, 1999).[25] According to this definition, taxpayers who comply out of fear of detection and punishment for noncompliance are not considered to be compliant taxpayers.

The recent study by Wu (2012) provides a critical literature review on the concepts of tax compliance and the study also attempts to develop a 'universal' definition that can be applied to each of the compliance concepts identified in the literature. The study concluded that

[25] Refer to James and Alley's (1999) definition of compliance behaviour in an earlier paragraph.

despite the large volume of literature, based on the current state of that literature and case law, a universal definition still remains elusive, and recommends more research in this area. This view is supported by Long and Swingen (1991), McKerchar (2003a) and Devos (2004), who observe the lack of a universal definition or model of tax compliance despite the existing volume of literature.

The current study attempts to focus on civil penalties,[26] rather than criminal penalties, by ensuring that the hypothetical scenario that measures behavioural intention is based on a small sum of $1000, and does not involve any manipulation of records if respondents do not wish to report that income. Respondents were only required to indicate whether they intend to report or not report the hypothetical income, which does not constitute any of the crimes currently falling under the criminal provisions of the CPR. Further, the terms "compliance" and "noncompliance" will only refer to all intentional compliant or noncompliant behaviour. The behaviour intentionally undertaken by the taxpayer could result in both psychological consequences (such as guilt), and economic consequences (such as monetary fines), which in most cases the taxpayer may be aware of. Unintentional behaviour may lead to economic consequences, but is unlikely to lead to psychological consequences, and therefore is excluded from this study.

In order to ensure that the behaviour captured for this study is intentional, the behavioural intention measures in the questionnaire (the scenario and following questions) refer to a specific concerted effort or intention or decision to report or not report a particular income. This ensures that the action or behaviour is voluntary and deliberate. Past behaviour, on the other hand, is based on self-reported past behaviour, which the person in most likelihood would be aware of (even if any unreported income has not been picked up by the tax authority). A respondent's past behaviour also relies on the respondent's honesty and accurate recollection on their self-reporting.

1.4.2 Research Model

The TPB, developed by Fishbein & Ajzen (1975), highlights the importance of behavioural beliefs, normative beliefs and control beliefs on successfully performing any desired behaviour. The TPB posits that an individual's intention (and subsequently behaviour) is influenced by an individual's attitude towards performing the behaviour, social pressures from important referents to conform, and an individual's perceived control in engaging in the target behaviour.

[26] Civil penalties are defined as any offence committed under sections 141A to 141D of the TAA 1994, whereas criminal penalties are defined as any offence committed under section 141E, 143A and/or 143B.

Attitudes towards the behaviour refer to an individual's beliefs of the favourableness or unfavourableness of the behaviour of interest, and the evaluation of the outcomes from engaging in the behaviour (Fishbein & Ajzen, 1975; 2010). Extending the concept of attitudes to tax compliance behaviour, attitudes are measured by the perceived desirability of complying with the tax laws. Two different types of attitudes were used in developing the current research model: attitudes based on legal sanctions (probability of detection, probability of punishment and severity of punishment); and attitudes based on non-legal sanctions (tax morale, such as moral values, sense of civic duty and feelings of guilt).

Subjective norms refer to beliefs about the normative expectations of important referents and the motivation to comply with these expectations. The norms are more narrowly defined and refer to the performance of a particular behaviour (Fishbein & Ajzen, 1975; 2010).

Perceived behavioural control is defined as the extent to which an individual believes that the individual is capable of performing the target behaviour (Fishbein & Ajzen, 1975; 2010). This involves considering the presence or absence of factors that may facilitate or impede performance of the behaviour, and the individual's perceived control over these factors.

Societal norms or perception of the prevalence of others' tax paying behaviour refer to an individual's view of the tax compliance behaviour of the population at large (Kirchler, 2007). It is a measure of an individual's perception of whether the general public is compliant (or not compliant), leading to beliefs that compliance (or noncompliance) is the society norm.

Perception of the tax authority refers to an individual's perception of the legitimacy of the tax authority, which in turn is considered to influence an individual's compliance behaviour (Tyler, 2010).

Perception of the tax system refers to an individual's general view of the tax system, that is, whether the individual views the system in a positive or negative light (Kirchler, 1999).

Procedural justice elements measure an individual's judgment of the procedural fairness of procedures applied by the tax authority under the CPR. These elements are based on the justice rules developed by Leventhal (1980).

Effectiveness of the penalties regime generally refers to an individual's perception of whether the CPR is effective in deterring noncompliance. The measures are based on general Deterrence Theory (Allingham & Sandmo, 1972).[27]

Motivational postures refer to the social distance an individual places between the individual and the tax authority when responding to regulations imposed by the tax authority (Braithwaite, 2003a; 2003b).

1.5 CONTRIBUTIONS OF THIS RESEARCH

During the last forty years or so the literature on tax compliance has provided a wealth of knowledge on compliance behaviour, but there are still many gaps in our understanding of how to measure, explain and control tax noncompliance (Alm, 2012). The large body of literature currently available provides varying definitions and theories of tax compliance behaviour; however, a universal definition of tax compliance or an optimal model of compliance is still elusive (Kirchler, 2007; McKerchar, 2010; and Wu, 2012). Further, the literature reveals the existence of a multitude of independent variables that could influence tax compliance behaviour, individually or in combination with other variables.

There is a consensus among researchers that tax compliance behaviour is complex and no one variable is capable of influencing behaviour (McKerchar, 2010). Rather, a range of variables are involved in shaping the behaviour. However, including all possible variables identified as potential determinants of tax compliance is beyond the scope of this study. Instead, this study will contribute towards the current body of knowledge by addressing a few selected variables, and in the combination seldom applied, to illustrate the comparative contributions made by legal and non-legal sanctions in promoting voluntary compliance. This study also examines and compares the influence of personal, social and societal norms, in one causal model setting. This provides a useful insight into the effect of the various norms on compliance, and the comparative effects of legal and non-legal sanctions.

Tax authorities have used a range of policy tools to increase tax compliance. The New Zealand tax authority's (IRD) key policy tool since 1997 has been to employ the CPR to deter noncompliance, and at the same time encourage compliance behaviour. The use of such legal sanctions comprises a range of penalties which can be manipulated by tax authorities in an attempt to modify tax compliance behaviour. However, the literature has provided equally

[27] The CPR sets out two distinct regimes to penalise noncompliant behaviour, which comprise a civil penalties regime and penalties for criminal offences. The current study is based on civil penalties which excludes tax evasion (which comes under the criminal penalties regime).

compelling reasons for using tax morale and non-monetary sanctions to promote compliance. A large body of literature has provided evidence that informal sanctions or tax morale are more effective in modifying compliance behaviour than penalties (for example, Kornhauser, 2007). Tax authorities therefore need to understand the influence of tax morale and other variables on taxpayers' compliance behaviour in order to encourage voluntary compliance. This study makes a positive contribution in identifying variables including beliefs and attitudes that could influence tax compliance behaviour.

Ritsema et al.'s (2003) study found that various sub-groups of taxpayers were affected differently by the determinants of tax compliance. Their study suggests that researchers should start looking at the effects of various compliance variables on different sub-groups of taxpayers, and not treat all taxpayers as one generic or homogeneous group. Thus there is a need for research to examine and compare the effects of compliance variables on different groups or sub-groups of taxpayers. This study makes a positive contribution through its attempt to examine the effects of some selected compliance variables on three distinct sub-groups of New Zealand taxpayers: general taxpayers, tax agents, and tax lawyers. It is envisaged that this study will demonstrate that all variables do not uniformly affect the behaviours of all sub-groups of taxpayers equally, and that certain variables may affect one sub-group, but not other sub-groups.[28]

To the best of the author's knowledge, this is one of the only studies publicly available and independent of the IRD, which examines the effectiveness and procedural fairness of the New Zealand CPR on attitudes and on behaviour, respectively. Further, this is also the first study to examine the views, experiences and the resulting behavioural changes of New Zealand taxpayers who have been penalised under the CPR. The IRD has control over managing the penalties process, and the potential to achieve the desired behavioural outcomes from taxpayers if the process is managed well. However, in order to achieve that, the IRD must understand the effects of the penalties on taxpayers who have been penalised. This study will, therefore, make a positive contribution towards increasing IRD's and policymakers' knowledge and understanding of these effects on taxpayers, and their future compliance behaviour.

The combination of adopting the TPB as the underlying framework, analysing the survey data using SEM with PLS path modelling technique, and the application of a relatively new analytical tool (PLS-Graph), provides a useful contribution to the body of knowledge. The underlying theory used to develop the current research model for this study has been widely

[28] For the purposes of this study, the terms "groups", "sub-groups" and "sample groups" are used interchangeably.

used in a range of behavioural studies. However, the TPB has not been widely applied in tax compliance research. The improvement in the rigour of the research, and the detailed description provided on the application of the new methodological approach in the traditional field of tax compliance research, is a further contribution towards current compliance literature providing a basis for future researchers to develop further.

Finally, this study may not only benefit other researchers attempting to understand New Zealand taxpayers' behaviour, but also help policy makers and the relevant tax authority to get a better understanding of tax compliance behaviours of New Zealand taxpayers, tax agents and tax lawyers. Any behavioural study into tax compliance will only improve the current knowledge of tax compliance behaviour, which has seen a dearth of studies originating from New Zealand, compared to the large volume of research carried out in other countries such as Australia and the United States. Applying economic and noneconomic variables in a single causal model illustrates how taxpayers' behaviour affects a tax system and how tax authorities can use current policy tools in conjunction with behavioural responses to improve voluntary compliance in New Zealand.[29] The results of this study, which are grounded in widely accepted theories, can equally apply to taxpayer behaviour in other similar tax jurisdictions (such as, IRS, ATO and Canada Revenue Agency).

1.6 STRUCTURE AND OVERVIEW OF RESEARCH

The remainder of this thesis is set out as follows. Chapter 2 presents a review of selected literature related to tax compliance studies. The focus will be on literature that examines the relationships among the constructs incorporated in the research model, which are based on the TPB. Due to the sheer volume of literature available on tax compliance, this study will limit the review to published studies that are considered by the author to be the most relevant.

Chapter 3 presents the main theories employed in this study, namely, the Theory of Planned Behaviour, Procedural Justice Theory, Deterrence Theory, and Motivational Posturing Theory. The discussion is only intended to provide the necessary background knowledge, and is not intended to serve as detailed analysis on the selected theories.

Chapter 4 sets out the theoretical framework, and outlines the development of the proposed research model. It also sets out the theoretical justification for the hypotheses tested.

[29] The New Zealand tax system is based on a voluntary self-assessment and dispute resolution system which relies on taxpayers to voluntarily report and pay the correct amount of taxes. Self-assessment was introduced into the legislation by the Taxation (Taxpayer Assessment and Miscellaneous Provisions) Act 2001 with effect from 24 October 2001, with application from the 2002/2003 and subsequent income years. Section 92 of the TAA 1994 requires taxpayers to assess their taxable income and income tax liability.

Chapter 5 outlines and discusses the research methodology used to gather the required data, and the approaches taken to analyse and test the survey data. This chapter also provides a detailed discussion on the approach adopted in applying Structural Equation Modelling with Partial Least Squares, and justifications for using the methodology to test the research hypotheses.

Chapters 6 and 7 set out the results from the analysis of the survey data. Chapter 6 presents the preliminary results of the various tests applied to determine the suitability of the data for further analysis, and includes addressing nonresponse bias, missing data and the representativeness of the survey data. Descriptive statistics are also presented in this chapter.

Chapter 7 presents the results of the evaluation of the measurement models, and includes results of all reliability and validity tests carried out on the survey data. This is followed by the results from the evaluation of the structural model, which includes: path coefficients; variances explained for the various constructs; and the global goodness of fit indices validating the research model globally.

Chapter 8 concludes the study with a summary of the results and the implications for tax authorities and other researchers. This chapter also emphasises the limitations of the study before concluding and providing suggestions for future extensions. Copies of all relevant supporting material, such as Statistical Package for the Social Sciences (SPSS) and PLS-Graph outputs, the survey instrument, and correspondence are attached as appendices to this thesis.

CHAPTER 2
SELECTED BEHAVIOURAL TAX COMPLIANCE LITERATURE REVIEW

2.1 INTRODUCTION

The purpose of this chapter is to present and review relevant literature on tax compliance behaviour. Given the large volume of literature on tax compliance, this study will limit the review to published studies that are considered to be the most relevant to this research.[30] The review will focus on more recent studies while referring to relevant older studies that have provided useful contributions to the literature. There will be no discussions on perceptions of the tax authority and the tax system, given the minimal literature available on these two research variables.[31]

The first section that follows, section 2.2, describes the tax compliance models commonly used in tax compliance research. This is followed by section 2.3 which presents a discussion of studies grounded in the Theory of Planned Behaviour (TPB). Due to the minimal use of the TPB in tax compliance research, this section will also include behavioural studies using the TPB in research carried out in other behavioural domains. Section 2.4 presents selected literature on sanctions, which include studies based on formal and informal sanctions.

Studies and research grounded in Procedural Justice Theory (PJT) are presented in section 2.5, while section 2.6 discusses the results of selected research examining the effects of societal norms, or the perceived prevalence of others' tax compliance behaviour on taxpayer compliance. Section 2.7 discusses the outcomes from studies that examine taxpayers' perceptions of the comparative seriousness of tax offences, as compared to other similar offences. Section 2.8 presents the limited studies available that are based on Motivational Posturing Theory (MPT or social distance). This chapter concludes with a summary presented in section 2.9.

[30] Jackson and Milliron (1986); Cowell (1990); Andreoni et al. (1998); Alm (1999); Niemirowski et al. (2001); Richardson and Sawyer (2001); Slemrod & Yitzhaki (2002); and Kirchler (2007) provide excellent reviews of the tax compliance literature.

[31] Most studies on tax authority tend to focus on the impact of tax authority contact on tax compliance and not on the general perception of the tax authority, as this study proposes. Similarly, the majority of studies on tax system tend to focus on the fairness of the tax system, rather than on general views relating to the tax system.

2.2 MODELS COMMONLY USED IN TAX COMPLIANCE RESEARCH

Over the past forty years, the traditional tax compliance models (Economic Deterrence Models) have been modified and improved upon by economists, psychologists and sociologists, each with the aim of trying to understand the complex behaviour of individuals in respect of tax reporting. While many theories and models have been developed over the years, tax compliance research has generally been based on three theoretical models: the Economic Deterrence Models; the Social Psychology Models; and the Fiscal Psychology Models. The Fiscal Psychology Models are hybrid models that incorporate elements from each of the Economic Deterrence Models and the Social Psychology Models. The following sections will briefly introduce these models in order to offer an understanding of the various economic and noneconomic variables used in the current research model.

2.2.1 Economic Deterrence Models

Since Becker's (1968) seminal work on crime and punishment, researchers have developed a large body of literature on criminal behaviour and law enforcement. The Allingham and Sandmo (1972) Model is based on similar assumptions, with the emphasis on individuals making the choices of whether, and to what extent, to understate their income. Their Model further assumes that individuals are completely amoral and make choices of whether and how much income to report or suppress, in the same way they would approach any risky decision or gamble. Individuals will aim to maximise the expected utility of the choices made and are further influenced by possible legal penalties, in the same way they would be influenced by any other contingent cost (Slemrod, 2007). Tax evasion therefore depends on the probability of detection of unreported income and the threat of being penalised, the size of the penalty for not complying, and the individual's degree of risk aversion. Yitzhaki (1974) amended the Allingham and Sandmo (1972) formulation by basing the penalty for discovered evasion on the amount of tax underreported, rather than on the amount of understated income, as in the Allingham and Sandmo Model.

In its simplest form, the formula assumes that an individual receives a fixed amount of income, and that (s)he then decides how much to report and how much to evade. The individual's real decisions are not considered. The individual's income from the individual's labour supply and from capital is taken as given (Sandmo, 2005). The Model assumes that the taxpayer receives a fixed amount of income *I*, and must decide how much to report and how much to suppress from the tax authority. The taxpayer is expected to pay tax at rate *t* for the

reported income *R*, while no taxes are paid on the suppressed income. If the understatement of income is not detected (I_N) by the tax authority, the net income of the taxpayer is stated as:

$$I_N = I - tR$$

However, if the income suppression (I_D) is detected through an audit with a fixed probability, and all understated income ($I - R$) is discovered by the tax authority, the individual is required to pay a penalty at rate θ on each dollar of the tax value of the shortfall. The taxpayer's income if penalised for underreporting is as follows:

$$I_D = I - tR - \theta [\, t\,(I - R)]$$

Sandmo (2005) makes the point that some portion of the income will be unknown to the tax authority, whereas some portion is already known before filing (for example, through third party reporting). Therefore, the part of a taxpayer's income that could be evaded without the probability of detection (p) is income not subject to third party reporting and hence unknown to the tax authority. Taxpayers will choose the amount to evade in order to maximise their expected utility (*EU*), which is stated below:

$$EU\,(I) = pU\,(I_D) + (1 - p)U\,(I_N)$$

where *EU* is the expected utility of the evasion gamble, and where the utility is a function of the income level only.

The Economic Deterrence Models of tax compliance consider the taxpayer to be a rational individual who will maximise his or her expected utility of the tax evasion gamble (Alm, 2012). Alm (2012) further adds that the taxpayer will weigh the benefits of successful noncompliance against the probability of detection and punishment. Therefore, if the taxpayer does not want to be caught and penalised, then (s)he will report all income received.

As discussed above, the Economic Deterrence Models' approach to understanding tax compliance behaviour is based on enforcement and punishment. These Economic Deterrence Models suggest that the level of reported income increases with an increase in the level of enforcement activities, and the resulting punishment if noncompliance is detected (Allingham & Sandmo, 1972). Increased perception of the audit probability and penalty rate is also deemed to increase the compliance level (Allingham & Sandmo, 1972). This is on the basis that taxpayers who believe there is a high probability of being detected for noncompliance will be deterred from not complying because of the fear of being penalised. This approach

concludes that taxpayers only comply because of the economic consequences of detection and punishment (Alm, 2012).

Another assumption of the Economic Deterrence Models is that utility is considered to be a function of income only, while the effect of expenditure on compliance is ignored (Yong, 2006). It is widely acknowledged in literature that income and expenditure provide taxpayers with the opportunity to either understate or overstate their taxable income. A number of studies identified understating income and overstating deductions as two most commonly used modes of evasion (Troutman, 1993; and Hasseldine et al., 1994). Overstating deductions (although it may only be available to taxpayers earning business income), can be equally effective in reducing a taxpayer's income tax liability as understating income. Therefore, the above assumption (that utility is only a function of income) may only be applicable to taxpayers who earn their income from salaries and wages and those who are able to preclude cash jobs in the calculation of taxable income (Yong, 2006).

Yitzhaki (1974) argued that the tax rate will have no effect on the terms of the tax evasion risk if the penalty (and any associated non-pecuniary cost) for detected noncompliance is proportional to the tax understated. Yitzhaki (1974) further argued that as the tax rate rises, the cost of a detected understatement of taxes rises in exact proportion to the reward from a successful understatement of taxes, so the reward-to-risk ratio is unchanged. Yitzhaki (1974) explained that in such situations, a higher tax rate only has an income effect and, if a taxpayer's level of risk aversion increases as after-tax income falls, a higher tax rate is likely to decrease tax evasion. This view was also supported by Alm (2012), who notes that whilst a higher tax rate may increase the return on the underreporting (which reduces reported income through a substitution effect), the higher tax rate also has an income effect. If the taxpayer exhibits decreasing absolute risk aversion, then the lower income makes the evasion gamble less attractive. This means that in New Zealand and most other countries, where the penalty imposed is at a proportional rate on evaded taxes, the substitution effect disappears, resulting in a higher tax rate leading to increased reported income through the income effect.

Finally, tax compliance behaviour is complex and involves the interaction of multiple elements of compliance behaviour, which is not reflected in the simplicity of the Allingham and Sandmo Model. The basic economics-of-crime approach does not capture the relevant elements that influence a taxpayer's compliance decisions (Alm, 2012).

Over the years, a number of theoretical extensions have occurred with respect to the Economic Deterrence Models, which have involved the continued reliance on expected utility theory (Alm, 2012). These extensions are reviewed and discussed by a number of scholars

(Cowell, 1990; Andreoni et al., 1998; Slemrod & Yitzhaki, 2002; Sandmo, 2005; Devos, 2007; Slemrod, 2007; and Torgler, 2007), and include: individual choices; alternative penalty tax and tax withholding functions; complexity and uncertainty about the relevant fiscal parameters; use of paid preparers; provision of government services; positive reward for honesty; and the inclusion of systematic audit selection rules in which the tax authority uses information from the tax returns in their audit strategy (Alm, 2012). These extensions were made in an attempt to add some realism into the Economic Deterrence Models, but at the same time they "also complicate the comparative statics[32] of the compliance choice" (Alm, 2012, p. 62). Nonetheless, enforcement is still considered to be the key factor that motivates compliance. Further, the extensions do not change the compliance-tax rate response, which remains the same.

Despite the extensions, the Economic Deterrence Models based on Allingham and Sandmo's (1972) deterrence theory model have faced increasing criticism. The main criticism relates to the assumption that individuals make tax paying decisions in a social vacuum and overlooks the human elements or traits involved in the decision-making process (Cullis & Lewis, 1997). Cullis and Lewis (1997) maintain that individuals draw their identity from belonging to a group and consequently the traits of the group may influence their decision-making process. McKerchar (2001) identified a number of specific limitations in the application of the Economic Deterrence Models which include, not adequately addressing the issue of randomness (or uncertainty of the assessment of taxable income by an auditor) which requires quantification, and the presumption that all taxpayers respond identically to the same level of randomness. McKerchar (2001) further notes that despite the introduction of modified Economic Deterrence Models, the outcomes and limitations remain largely the same. That is, "they are theoretical in nature, sometimes conflicting, based on generally unrealistic assumptions, and appear to be without empirical validation" (McKerchar, 2001, p. 231).

Further, the effects of tax morale, which includes values, norms, morals, beliefs and attitudes towards tax compliance behaviour, may be equally important in tax reporting decisions (Kirchler, 2007; Kornhauser, 2007; Torgler, 2007; and Cullis et al., 2012). Therefore, it seems obvious that the Economic Deterrence Models only explain part of the tax compliance problem. Noneconomic factors such as tax morale explain the other part of the compliance problem.

[32] The term "comparative statics" is used by Alm (2012) to illustrate the equation of the economics-of crime model which gives the results that compliance depends upon enforcement, that is, declared income increases with an increase in the probability of detection or in the penalty rate.

The limitations identified with the Economic Deterrence Models have led researchers to integrate other elements related to compliance behaviour, in an attempt to better understand tax compliance behaviour (Cowell, 1990; Wallschutzky, 1993; and Alm, 2012). The criticisms or limitations identified in the Economic Deterrence Models led to the emergence of the *fiscal psychology model* of tax compliance which is outlined in section 2.2.3 of this chapter.

2.2.2 Social Psychology Models

The emergence of Social Psychology Models was the result of criticisms from psychologists and sociologists who emphasised the economic models' inadequacy in explaining compliance behaviour. Critics of the Economic Deterrence Models argue that decisions made by individuals are not always based solely on maximising economic utility, rather sociological and psychological factors were also considered to be relevant in any tax reporting decisions. The Social Psychology Models consider the influence of social motivations and interactions on individuals' decision-making process (McKerchar, 2003a). These Models also attempt to examine the process by which individuals form their expectations, which in turn influence individuals' decisions. Assumptions are made that, by understanding individuals' behaviour, it may be possible to understand and predict taxpayer compliance behaviour.

A number of Social Psychology Models have been developed over the years; however, only four of these models are considered to be relevant to tax compliance research: Compositional Modelling; Decompositional Modelling; Attribution Theory; and Equity Theory (McKerchar, 2003a). Each of these models will be briefly addressed in the following paragraphs.

Compositional Modelling refers to methods that are based on individuals making a reasoned action, based on personal beliefs and attitudes. This is referred to as the Theory of Reasoned Action (TRA), and is based on the assumption that people generally make decisions to engage or not to engage in a particular behaviour, after considering their beliefs with regard to the behaviour, and the outcomes from engaging or not engaging in the behaviour. The TRA and its successor the TPB are discussed in detail in Chapter 3, and as such only a brief outline will be provided here.

In brief, the TRA posits that behaviour is a function of intention; and intention, in turn, is a function of attitude towards the behaviour and subjective norms. According to the TRA, a person will engage in the target behaviour if the person's judgment of performing the

behaviour is favourable and the social pressure from important referents motivates the individual to perform the target behaviour. The strengths and weaknesses of applying the TRA in tax compliance research are discussed in Chapter 3. The TRA was extended into the TPB to include perceived behavioural control, which has a direct influence on behaviour, and an indirect effect on behaviour through intentions.

Decompositional Modelling refers to a method which commences with the general preference or decision, and then works backwards to establish the reasons, and the trade-offs that the person made (which may not always be made consciously), in arriving at the decision (McKerchar, 2003a). Although Decompositional Modelling has been widely used in marketing research, especially in large-scale studies, the collection of data for this method can be time consuming (McKerchar, 2003a). This method is also considered to be less accurate due to its sheer breadth and volume; however, new hybrid Decompositional Models are now available.

Attribution Theory deals with the processes by which attributions are derived from informational input (Kelley, 1972). Attribution Theory posits that most people are uninformed and try to understand the causes of events and actions around them (Kaplan et al., 1988). These causes of events and actions are attributed to either personal or situational factors (Kelley, 1972). If a person behaves in a manner similar to others in a particular role, then the behaviour may be attributed to the role or the situation. Conversely, if a person acts in a different manner to how others would behave in a similar role, then the action cannot be attributed to the role or the situation, and therefore it must be attributed to the person (Kaplan et al., 1988). In summary, Attribution Theory is the study of how people explain or understand the behaviour or actions of others by attributing its cause to either personal or situational factors (McKerchar, 2003a). McKerchar (2003a) argues that Attribution Theory is also known to contribute towards the Fiscal Psychology literature.

Equity Theory was developed from the Theory of Cognitive Dissonance which posits that individuals will attempt to reduce the level of internal dissonance they experience when their cognitions are in disagreement (Adams, 1965). Inputs and outcomes are considered to be the major components of an exchange relationship. Earlier studies focused on the reactions to pay inequalities (Adams, 1963). Adams (1963) analysed inequity in terms of the discrepancies between an individual's job inputs and job outputs, and the behaviour that may arise from these discrepancies. Equity Theory is therefore concerned with the perceptions of the social consequences of distributive injustice of unfair exchange within a social system. Later studies

applied Equity Theory to the distribution of a broad range of valued outcomes (Messick & Cook, 1983).

This view of equitable social exchanges was extended by Thibaut et al. (1974) to include concepts of fairness and commitment. Equity Theory proposes that people are more likely to comply with rules if they believe the system that determines the rules to be equitable (Thibaut et al., 1974). In a tax context, Equity Theory is concerned with the fairness of exchange between the taxpayer and the government (Wallschutzky, 1984). Consistent with Equity Theory, inputs are the taxes paid by the taxpayer to the government, and outputs are the services provided by the government. If there are any perceived inequities in the exchange relationship, Equity Theory predicts that tax evasion could become more prevalent as the system is perceived as becoming more inequitable. This is because tax evasion is an attempt by taxpayers to restore equity in the system of trade conducted with the government (Spicer & Becker, 1980). Therefore, consistent with Equity Theory, perceived equity in the exchange relationship between government and taxpayers will enhance compliance behaviour.

2.2.3 Fiscal Psychology Models

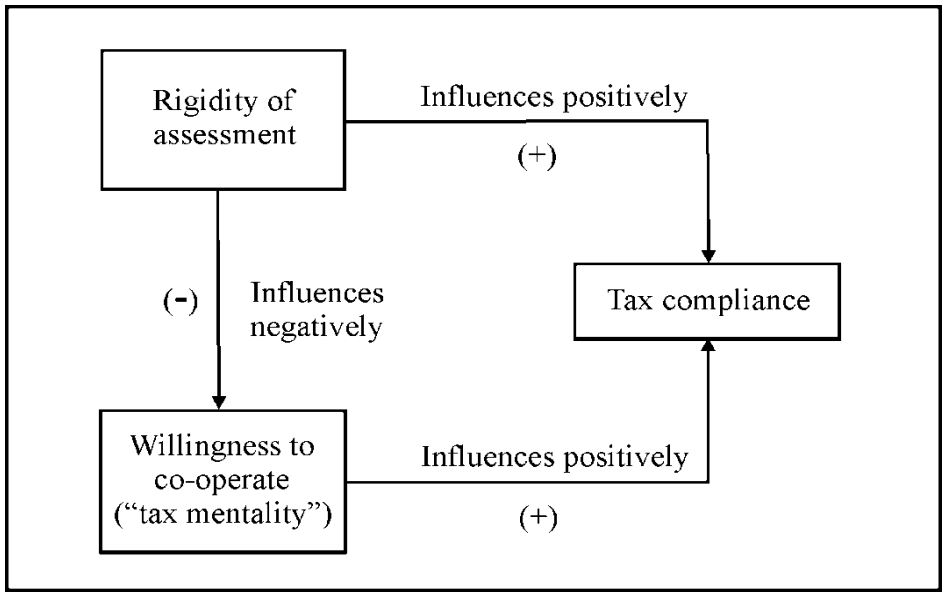
The Fiscal Psychology Models of tax compliance behaviour are a combination of the Economic Deterrence and Social Psychology Models. These models assume that economic or financial factors, together with social and psychological factors, influence behaviour. One of the earlier studies resembling the Fiscal Psychology Models is Schmölders' (1959) work on tax evasion, which introduced the concept of "tax mentality." Tax mentality refers to attitudes regarding tax compliance (or non-compliance), and can differ widely between people from different countries (Schmölders, 1959). In other words, Schmölders (1959) argues that individuals have divergent views (based on their cultural differences) of their obligation to contribute to the community through their taxes; and this leads to different tax mentalities. These tax mentalities are closely related with people's community-mindedness, and are developed by personal experiences. Schmölders (1959) adds that when taxpayers are confronted with the obligation to pay, they are more likely to resist this pressure, leading to tax evasion. Schmölders (1959) was therefore one of the first to examine the relationship between people's attitudes and their compliance behaviour. Over the years the Schmölders Model has been supported by extensive empirical research, with scholars still referring to Schmölders' (1959; 1970) work on tax morale (for example, Alm and Torgler, 2006).

A later study by Strümpel (1969) developed one of the earliest Fiscal Psychology Models of tax compliance (Hessing et al., 1988). This Model formalised the results from a multinational study on tax compliance into a simple three-variable model (Kinsey, 1992).

Strümpel's Model, which is presented in Figure 2.1, is based on two main elements: *rigidity of assessment*, and *willingness to cooperate*. *Rigidity of assessment* describes the level of confrontation between the tax authority and taxpayers, and is measured by the amount of tax and the level of fines, the assessment process and the level of 'red tape' involved in engaging with the tax authority. This element captures aspects of tax enforcement that reflect a deterrence model of social control (Kinsey, 1992). The other element, *willingness to cooperate,* reflects individuals' attitudes and perceptions of the tax system.

Whilst Strümpel's Model assumes that *willingness to cooperate* is positively related to tax compliance behaviour, *rigidity of assessment* on the other hand is assumed to have two competing effects. The first is a direct positive effect on *tax compliance*, which as stated previously is influenced by the tax rate, the amount of fines and other economic variables. In contrast, the second effect exerts a negative influence through the intervening variable of *willingness to cooperate*, which involves the engagement process with the tax authority and other noneconomic variables.

Figure 2.1: Strümpel's Model of Tax Compliance (1969)
(Reproduced from Hessing et al., 1988, p.526)



These earlier studies offer an interesting aspect of the traditional Economic Deterrence Models. The models imply that without the influence of any supporting norms, strict law enforcement may lead to negative responses from taxpayers, which may eventually undermine taxpayer compliance (Hessing et al., 1988). Hessing et al. (1988) further observed that resistance to tax law may be even more widespread if the legitimacy of laws is questioned and taxpayers do not consider themselves as obliged to obey the law. Subsequent

to the introduction of these earlier models, a number of theoretical models of tax cheating were introduced: the Song and Yarbrough Model (Song and Yarbrough, 1978); the Internal Revenue Service's Model of Taxpayer Compliance (IRS, 1970); Westat's Model of Taxpayer Compliance(Westat, 1980); Lewis's Model of Income Tax Compliance (Lewis, 1982); Vogel's Model of Taxpayer Compliance (Vogel, 1974); Groenland and van Veldhoven's Model of Tax Cheating (Groenland & van Veldhoven, 1983); and Spicer's Model of Tax Cheating (Spicer, 1974).[33]

One aspect of the Fiscal Psychology Model is the emphasis on taxpayers' attitudes and the influence of attitudes on compliance behaviour (Schmölders, 1959; and Strümpel, 1969). Schmölders (1959) introduced the concept of tax mentality, which are measures of attitudes towards tax compliance, while Strümpel's (1969) concept of tax mentality reflects an individual's willingness to co-operate with the tax authority. Lewis's (1979) attempts to develop measures of tax mentality led to the conclusion that tax mentality was based on individual's self-interest (which is the premise of the Economic Deterrence Theory). A later study undertaken by Lewis (1982) attempted to understand taxpayers' compliance behaviour by examining taxpayers' attitudes and perceptions. Lewis (1982) contends that attitudes are linked to behaviour, and that a positive attitude will result in increased compliance.

These earlier theoretical models provide a wealth of knowledge towards creating a more comprehensive theory of tax compliance, and offer a different aspect of tax compliance behaviour. Whilst the offer of a different aspect of compliance by the Fiscal Psychology Models was welcomed, several concerns were nonetheless raised (Cuccia, 1994). The key concern relates to the use of self-reports to capture compliance data, which is considered to be unreliable. These self-report concerns continue to exist to this day.[34] Concerns were also raised with respect to the models' inability to identify the mechanisms through which relationships between various demographic and attitudinal variables, and compliance operate (Cuccia, 1994).

Later studies of Fiscal Psychology Models tended to move away from deterring noncompliance and instead attempts were made to focus more on encouraging voluntary compliance (Pope & McKerchar, 2011). Pope and McKerchar (2011) attribute this shift to the increasing reliance placed on psychological theory and principles in an attempt to understand tax compliance behaviour. Further, over the years, the concept of 'tax mentality', as employed in Schmölders' (1959) and Strümpel's (1969) Models, evolved and has gradually been

[33] Comprehensive reviews of these models are presented in Kinsey (1986) and Hessing et al. (1988).

[34] This assumption is based on the a number of recent survey studies using self-reports that continue to highlight the limitations of self-reports (for example, Bobek & Hatfield, 2003; and Saad, 2009; 2011).

replaced with the term "tax morale" (Kirchler, 2007; Kornhauser, 2007; and Torgler, 2007). However, contemporary studies tend to define the term "tax morale" very widely, and encompass attitudinal variables such as: feelings of guilt; moral values; sense of civic duty; and other similar attitudinal variables.

In summary, Fiscal Psychology Models which have their origins in Schmölders' (1959) work, tend to view tax enforcement as a behavioural problem, which can be addressed by cooperation between taxpayers and the tax authorities (Pope & McKerchar, 2011). Despite the large volume of research undertaken on tax compliance research since the introduction of Allingham and Sandmo's (1972) Model, there is still no consensus from scholars on an optimal tax compliance model (McKerchar, 2003a). The key challenge or obstacle in achieving this is because the data required for such an exercise is not available in most cases, and tax authorities are generally unwilling to provide actual compliance data to researchers. Therefore, the search for an optimal model may still carry on into the future, unless tax authorities are willing to co-operate with researchers.

2.3 THEORY OF PLANNED BEHAVIOUR

The Theory of Planned Behaviour (TPB), which is an extension of the Theory of Reasoned Action (TRA), posits that attitudes, subjective norms and perceived behavioural controls are key elements in determining a person's intentions to engage in a target behaviour, and ultimately influences the performance of the behaviour (Fishbein & Ajzen, 1975; and Ajzen, 1991). TPB is one of the most widely used social psychological models applied in behavioural research to explain and predict behaviour (Armitage & Conner, 2001). The TPB framework has been employed in numerous disciplines to understand antecedents to behavioural intentions and the resulting behaviour. The majority of the studies have validated the TPB in wide-ranging behaviours such as: exercise (Ajzen & Driver, 1991); recycling (Taylor & Todd, 1995); alcohol misuse (Marcoux & Shope, 1997); weight loss (Sparks et al., 1995); and speeding (Conner et al., 2007). The application of the TPB in tax compliance behaviour is still in its infancy, therefore, the literature reviewed will include behaviours in other domains (including meta-analyses), in addition to the few studies based on tax compliance behaviour.

Beck and Ajzen (1991) applied TPB to determine the theory's ability to predict and explain dishonest actions by college students. The self-reports of behaviour used in the questionnaire include: cheating on a test; shoplifting; and lying to get out of assignments. In the first step, the TRA was evaluated, and the results indicate that it performed well in explaining between 33 and 61 percent of the variance in intentions. Most of the predictive

accuracy can be attributed to attitudes towards the behaviour. The only exception here was with respect to the lying behaviour, in which subjective norms make a significant contribution to the prediction of behaviour. In the next step, the perceived behavioural control (PBC) construct was added to the research model, which resulted in a substantial and statistically significant improvement in predictions. The results demonstrated the TPB to be superior to the more limited TRA, indicating that intentions to perform dishonest behaviour are also strongly influenced by beliefs about the potential obstacles and opportunities present.

In the second phase of the study, with the addition of perceived moral obligations, the TPB was moderately successful in predicting self-reports of actual behaviour. The addition of perceived moral obligation improved the model but only in the case of lying, while the further addition of past behaviour improved prediction of lying as well as shoplifting. Overall, cheating, shoplifting and lying intentions were found to be strongly related to attitudes, subjective norms and PBC. In turn, intentions and PBC were found to be good predictors of self-reported behaviours. The outcome provides significant support for the TPB in predicting dishonest behaviour.

Conner et al. (2007) undertook two studies: one examining the power of the TPB to predict objectively assessed speeding offences (violation) across four different situations; and the other study, while taking a similar approach, employed a discrete measure of speeding behaviour on the road. The results of the two studies support previous research on driving behaviour based on the TPB. Attitudes, subjective norms, PBC, moral norms, anticipated regret and past behaviour predicted 76 percent of the variance in intentions to speed. Attitudes, moral norms, anticipated regret and past behaviour were consistent predictors of intentions across both studies. The role of attitudes in predicting speeding intention is consistent with a number of prior studies investigating speeding behaviour (for example, Parker et al., 1992).

Buchan (2005) employed an extension of the TPB to examine the influence of personal, social and organisational factors on ethical intentions. The study investigated the effects of attitudes, subjective norms, PBC, moral sensitivity and the ethical climate of accounting professionals. The results of the survey reveal a significant direct relationship between attitudes and ethical intentions, but the effect of subjective norms on ethical intentions was inconclusive. Interestingly, the study found a significant relationship between attitudes and subjective norms, leading to a strong but indirect relationship between subjective norms and ethical intentions. The relationship between PBC and intentions was not evaluated due to the measurement scale not achieving the required level of reliability. The outcome of this study

therefore supports the applicability of the TRA (Fishbein & Ajzen, 1975), instead of the TPB (Ajzen, 1991), in predicting ethical intentions of public accounting professionals.[35] Consistent with a number of studies, attitudes appear to have comparatively stronger explanatory power.

Mayhew et al. (2009) employed Structural Equation Modelling (SEM) in an attempt to empirically validate the TPB as a model for predicting student cheating. The study examined the effects of attitudes, subjective norms and PBC, together with moral reasoning, on college students' cheating behaviour. Two samples were developed for the study, including a third sample which is the sum (total) of the two samples. The results for the total sample displayed a good model fit, and provided validation for the selection and application of the TPB for predicting student cheating. The addition of moral obligation and high school cheating constructs produced a stronger model fit, indicating the importance of including these additional constructs in the TPB.

In terms of individual constructs (for the total sample), high school cheating, subjective norms and moral obligations achieved statistically significant effects on intentions. Surprisingly, attitudes failed to achieve any significant link with intentions. PBC, on the other hand, did not display any significant effect on intentions, but was significant on its effect on cheating behaviour. Intentions were also found to be significantly related to cheating behaviour. One of the sub-groups displayed similar results, while the second sub-group displayed a significant relationship between attitudes and intentions, but failed to support the relationship between PBC and either intentions or behaviour. Overall, the study demonstrated the viability of employing the TPB as a framework for understanding the psychological means that students use when deciding to cheat. Relating this outcome to a tax context, the results suggest that the TPB can be a useful framework for understanding the psychological processes that taxpayers employ when making tax reporting decisions.

Armitage and Conner (1999) evaluated the predictive validity of the TPB, which was extended to include self-identity in the context of health-related food choice. A related area examined was the effect of certain biases associated with self-reports on the findings. In particular, the authors assessed the effects of questionnaire format (random versus structured) and social desirability bias. The evaluation of the TPB research model demonstrated that intention was the key in determining food choices (behaviour). In turn, attitudes and subjective norms (and self-identity) were independently good predictors of intention. Further, contrary to predictions, the study failed to observe any significant effect of PBC on intention

[35] The TPB Model (Ajzen, 1991) comprises attitudes, subjective norms and PBC, whereas the TRA Model (Fishbein & Ajzen, 1975) comprises two components: attitudes and subjective norms.

or behaviour. The authors explained that this outcome may be due to the measures used, and argue that the PBC construct's influence may be significant if the indicators measuring PBC were divided into self-efficacy and perceived control over behaviour. The findings also demonstrated that the effects of questionnaire format and social desirability have no impact on the results, suggesting that these factors may not be as much of a problem as previously assumed. The study concluded that the behavioural models based on the TPB are robust predictors of food choice intentions and behaviour, which may also suggest that the TPB Models may also be robust predictors for other behaviours.

Armitage and Conner's (2001) meta-analytic review using a database of 185 independent studies revealed that TPB accounted for 27 percent and 39 percent of the variance in behaviour and intention, respectively. PBC accounted for large amounts of variance in intention and behaviour, independent of the TRA. In studies where the behaviour was based on self-reported measures, intentions and PBC accounted for 31 percent of the variance in behaviour (across 44 tests), whereas intentions and PBC only accounted for 20 percent of the variance in behaviour (across 19 tests). The authors attribute the differences between self-reported and objectively assessed behaviour to a number of factors, including self-presentation biases. Subjective norms were found to be weak predictors of intention. The authors attribute this outcome to a combination of poor measurement and the way normative pressures were conceptualised. The authors further note that the results are consistent with past meta-analytic reviews,[36] thus providing evidence that the TPB is a useful framework for predicting a wide range of behavioural intentions and behaviours.

In an attempt to illustrate that the TPB provides a useful conceptual framework for addressing the complexities of social behaviour, Ajzen (1991) conducted a meta-analytic review of 16 studies testing the application of the TPB in a range of behaviours. These studies include measures of attitudes, subjective norms and PBC. The analysis displayed an average multiple correlation of .71 for attitudes, subjective norms and PBC, with intentions, and an average multiple correlation of .51 for prediction of behaviour from intention and PBC. The analyses further revealed that regression coefficients for PBC were significant for all studies reviewed, clearly indicating that the PBC construct is a reliable and significant independent predictor of behavioural intentions across a wide range of behaviours. Further, despite some limitations,[37] the author concluded that the theory "incorporates some of the central concepts in the social and behavioural sciences, and it defines these concepts in a way that permits

[36] Prior meta-analytic reviews include: Ajzen (1991); Godin and Kok (1996); and Hausenblas, et al. (1997).

[37] Armitage and Conner (2001) argued that this study is limited in scope and sampling. Firstly, the study was based upon a limited data set which included unpublished studies, and secondly, the analyses only considered the direct antecedents of intentions and behaviour (Armitage & Conner, 2001).

prediction and understanding of particular behaviours in specified contexts" (Ajzen, 1991, p.206).

Another meta-analytic appraisal conducted by Godin and Kok (1996) provides evidence of PBC's contribution towards predicting intentions and behaviour. The review found that PBC contributed a mean additional 13 percent of variance to the prediction of intentions and 12 percent to the prediction of behaviour, which indicate the predictive capability of the TPB. However, as noted by the authors, one of the limitations of this study is that the review only considered health-related behaviours which are considered to be less complex than tax compliance behaviour, or behaviours that are not under full volitional control. The outcome of this study would therefore have some limited application to tax compliance behaviour.

Hausenblas et al. (1997) evaluated the efficacy of the TRA (Fishbein & Ajzen, 1975) and TPB (Ajzen, 1991) in explaining and predicting exercise behaviour, using the statistical procedures of meta-analysis. The results provide strong general support for the validity of the TRA and TPB. The results further indicate that, based on the magnitude of correlations between PBC, intentions and behaviour, TPB is found to be more useful than TRA in predicting and explaining exercise behaviour.

A large number of studies have demonstrated the power of the TPB in predicting a wide range of behaviours (Armitage & Conner, 2001). Although the TPB has been widely applied across a range of behaviours, there have been very few applications in the tax compliance domain. This also suggests that whilst the TPB has been well validated in a range of behaviours, the theory has not been well validated in tax compliance research. However, there is no reason to assume that the same success of application in other behavioural domains will not apply to the tax domain, as demonstrated by the few studies applying the TPB to tax compliance behaviour presented in the following paragraphs.

One of the earlier tax compliance studies, Hanno and Violette (1996), applied the TRA (the predecessor of the TPB) to explain tax compliance behaviour of compliers and non-compliers. The results indicate that attitudes and norms were positively related to tax compliance intentions and behaviour. In terms of behavioural beliefs that motivate attitudes, the results suggest that those who did not intend to comply with their tax obligations were less concerned with civic or moral responsibilities. The outcome of this study illustrates the predictive power of the TRA in explaining tax compliance intentions and behaviour.

Research conducted by Bobek and Hatfield (2003) found evidence consistent with the TPB's prediction of tax compliance behaviour. The authors developed a model based on the

TPB that includes: attitudes, subjective norms, PBC, and moral obligations. The developed model was tested with three specific tax compliance scenarios.[38] Attitude and subjective norms were both positive and highly significant in all three scenarios. In contrast, PBC was found to be positive and highly significant for only the tip scenario, and marginally significant in the charitable contribution scenario.

The findings also highlighted the important role of moral obligations in tax compliance behaviour. However, the study further revealed that high levels of moral obligation alone have no effect on eliminating cheating; it is when the opportunity to cheat is reduced that high levels of moral obligation reduce cheating. Overall, the authors conclude that the TPB is a suitable framework to consider variables that influence tax compliance behaviour.

Efebera et al. (2004) developed and tested a predictive model of tax compliance behaviour based on the TPB. The study investigated the compliance intentions of low-income individual taxpayers, by examining the effects of perceived tax equity (attitudes), normative expectations (subjective norms) and legal sanctions (PBC) on tax compliance intentions. Consistent with the TPB, their results indicate a significant positive relationship between compliance intentions and equity perceptions of the tax system, normative expectations and legal sanctions (or magnitude of penalties). The ability of the TPB to predict tax compliance intentions provides further support for the use of TPB in other tax compliance research.

Trivedi et al. (2005) examined the application (or suitability) of the TPB on tax compliance behaviour. The key purpose of the study was to test the predictions of economic and psychological theories (underlying the TPB) on why taxpayers might comply or fail to comply. The key hypothesis tested the premise that tax compliance behaviour is determined by three factors: tax compliance intentions, perceived behavioural control, and ethics. Tax compliance intentions, in turn, are determined by four factors: attitudes, subjective norms, perceived behavioural control, and ethics. Two measures of intentions were used: intention to comply (compliant behaviour); and intention to overstate deductions (noncompliant behaviour). Attitudes displayed significant relationship with compliant and noncompliant behaviour, whereas subjective norms were significant for the compliant behaviour but not for the noncompliant behaviour. PBC, however, did not display any significant influence on either behaviour. Nonetheless, overall, the results confirm the predictions of the TPB and highlight the important role of attitudes and intentions in tax compliance behaviour, over and above pure economic considerations.

[38] They include: the home office scenario (involving a deduction which should not be allowed); the tip scenario (involving tips received but not reported as income); and the charitable contribution scenario (deducting a charitable contribution that was greater than US$250 without any supporting documentation).

Drawing upon the TPB, Bobek et al. (2007) examined the underlying reasons why taxpayers overpay their taxes which would result in a tax refund. The study also employed the belief elicitation process recommended by Ajzen and Fishbein (1980) for identifying beliefs that taxpayers hold, with respect to lowering their withholding when faced with the possibility of a tax refund. Data collected from the online survey was analysed using SEM. The results suggest that taxpayers overpay because of their attitudes (a desire to avoid underpayment or uncertainty) and subjective norms (perceptions of friends' likely advice) influence their withholding decisions. The results were consistent with prior research, indicating the predictive ability of the TPB in tax compliance studies. It was also reported that the attitudes measure was twice as influential as their subjective norms in predicting withholding decisions.

In a study conducted by Saad (2009; 2011),[39] the TPB was used as the core theory to examine the effects of multiple dimensions of fairness, including tax knowledge and tax complexity, on individuals' behavioural intentions. The data was collected from a survey distributed to Malaysian and New Zealand taxpayers. The results from the SEM analysis with respect to the Malaysian taxpayers indicate that attitudes and subjective norms have significant effects on intentions (Saad, 2009). In contrast, the effect of PBC on intentions was inconclusive. The results for the New Zealand taxpayers displayed similar results and were reported in a separate publication (Saad, 2011). The findings from both groups of taxpayers demonstrated the applicability of the TPB in predicting and explaining tax compliance behaviour.

Although the next study is not directly related to tax compliance behaviour, the study is nonetheless associated with tax compliance, in that it involves tax filing behaviour. TPB and the Technology Acceptance Model (TAM) were employed to investigate the determinants influencing on-line tax filing behaviour (Lu et al., 2010). The results showed that attitude was the key factor affecting on-line tax filing behaviour. Attitude was also found to be affected by perceived usefulness, perceived ease of use, tax equity, social norm, and moral norm. The results indicate that on-line tax filing intention is determined by attitudes, subjective norms, and PBC, although attitude was found to have the strongest influence on individuals' on-line tax filing decisions. The study therefore supports the use of the TPB (together with TAM) in examining on-line tax filing behaviour.

[39] The results of the study were reported in two parts (the first part was published in 2009 followed by the second part in 2011).

In summary, there is overwhelming evidence which clearly demonstrates the applicability of the TPB in predicting a wide range of behaviour. At the conceptual level, the TPB has been used in explaining a range of behaviours in a variety of contexts, without having to develop a separate set of assumptions about the applicability of these paradigms. Although the research evidence on the applicability of the TPB in predicting tax compliance behaviour is currently limited, it nonetheless provides sufficient support for the TPB's application in tax compliance research. Overall, the results of the empirical studies reviewed in this sub-section provide support for the use of the TPB in explaining the behavioural process of people engaged in tax reporting decisions.

2.4 SANCTIONS (FORMAL AND INFORMAL)

The classical tax compliance models (Economic Deterrence Models) predict that audit probability, detection probability, probability of punishment, and severity of punishment are some of the economic factors that influence tax compliance behaviour. For the purpose of this study, these economic constructs or variables will be referred to interchangeably as legal sanctions or formal sanctions. Studies in criminal behaviour generally indicate that the probability of apprehension is more important than the sanctions imposed (Tittle & Logan, 1973; and Lempert, 1982). In a tax context, Andreoni et al. (1998) provide evidence that the subjectively perceived probability of legal sanctions is more important in influencing tax compliance behaviour, than the objective probability of legal sanctions.

Later tax compliance models (Social Psychology and Fiscal Psychology Models) tend to predict that tax morale and other noneconomic variables are better predictors of tax compliance behaviour. Alm (1991, p.584) states that "some individuals pay taxes because they believe that cheating is wrong." This suggests that informal sanctions (or non-legal sanctions) have an influence on an individual's compliance behaviour, rather than attributing compliance to the deterrent effects of economic sanctions. A number of researchers have suggested that the inhibiting effects of economic variables are smaller than the effects from tax morale, highlighting the importance of informal sanctions in compliance behaviour (Alm, 1991; Wenzel, 2004; Kirchler, 2007; and Torgler, 2007). Erard and Feinstein (1994) contend that noneconomic variables (in this case moral sentiments) will provide a more reasonable explanation of actual compliance behaviour, thus providing support that informal sanctions are equally effective in influencing compliance behaviour.

2.4.1 Formal Sanctions (Legal Sanctions)

The measures assessing legal sanctions are structured around three issues that have dominated the tax compliance literature, and are grounded in economic theory: probability or certainty of detection; probability or certainty of punishment; and severity of punishments. While probability of detection and probability of punishment may seem to overlap to a degree, they are in fact quite distinct from each other. Probability of detection refers to the perception of the level of certainty a person holds that his or her noncompliant behaviour will be discovered, while certainty of punishment refers to the perception that the detection will result in a monetary fine.[40] These economic elements are predicted to increase the expected cost of engaging in noncompliant behaviour. Accordingly, much of the literature assumes that legal sanctions increase compliance behaviour.

Research conducted by Christensen and Hite (1997) provides evidence that a taxpayer's perceptions of the likelihood of an audit, the likelihood an error would be detected, and the severity of the penalty imposed for the error, are likely to influence the taxpayers' tax reporting decisions. The study further found that these perceptions were all significantly greater for underreported income than for overstated deductions.

Witte and Woodbury (1985) empirically tested Deterrence Theory on Internal Revenue Service (IRS) data, and the results showed that increased audit rates and more severe penalties are positively related to increased compliance. This is consistent with Deterrence Theory. The probability of sanctions, on the other hand, was not significant. This view is supported by the results of another empirical study which also used IRS data (Dubin, 2012). Dubin's (2012) study found that noncompliance increased over the last thirty or forty years as a result of a decline in IRS tax enforcement, and in particular the limited audit activities. This clearly suggests that enforcement based on legal sanctions could effectively increase tax compliance. In contrast, Webley et al (1991) found only limited evidence to suggest that increased penalties will lead to increased compliance. By way of an explanation, Klepper and Nagin (1989) argue that in some instances even low levels of penalties can be considered to be severe. The severity of penalties may depend on an individual taxpayer's financial circumstances. A low penalty may be considered too severe for one taxpayer while another taxpayer may not have any difficulty with the same amount of penalty.

[40] Under the old Penal System of penalties in New Zealand, penal tax was seldom imposed for detected underreporting unless culpability was strongly evident, which in most cases would be problematic. Under the new Compliance and Penalties Regime in New Zealand, all shortfalls are initially penalised, and then abated by any applicable provisions, thereby providing comparatively more certainty with respect to punishment (monetary fines).

Research undertaken by Spicer and Lundstedt (1976) investigated the relationship between perceived severity of sanction and probability of detection and its effect on tax evasion. The study did not find any significant relationship between perceived severity of sanctions and tax resistance, nor between probability of detection and evasion.

Carnes and Englebrecht (1995) tested the influence of detection risk, increased magnitude of penalties, and income visibility on tax compliance behaviour. The magnitude of penalties and the perceived detection risk were found to be significantly related to compliance. The study also found that low levels of penalties are capable of influencing compliance behaviour, which suggests that even small increases in penalty levels could result in a significant increase in the compliance level.

Jackson and Milliron's (1986) review of the effects of the probability of detection on taxpayer compliance found that most of the studies reviewed indicate that noncompliant behaviour is associated with lower perceived detection probability. Their review also found that noncompliant taxpayers tend to perceive their chances of being detected as being lower than compliant taxpayers. Song and Yarbrough's (1978) analysis included attitudes as the tax evasion measure (rather than measuring actual behaviour), due to doubts about whether respondents will truthfully report their own tax evasion behaviour. Their study revealed that the probability and subsequent fear of detection by the tax authority were key factors influencing tax compliance behaviour.

Mason and Calvin (1978) discovered a significant relationship between perceived detection probability and compliance. They suggest that noncompliers tend to perceive a lower probability of detection than others, while generally most people tend to overestimate the probability of detection. Sheffrin and Triest's (1992) study established that those who perceive a higher probability of detection are more likely to report significantly less evasion.

Research carried out by Schauer and Bajor (2007) provides evidence supporting the relationship between detection risk and its associated penalties, and taxpayer compliance. However, the results also suggest that the magnitude of the effect of detection risk may not be very important, on the basis that a significant portion of the population question the tax authority's ability to detect tax underreporting. The study further found evidence suggesting that compliance is influenced more by the moral values of the taxpayer and the role (s)he plays in society, and his or her view of the government, than the effect of detection risk.

Warneryd and Walerud (1982), using interview data, failed to observe any significant relationship between perceived probability of detection and tax evasion. The results, however,

indicated a significant relationship between perceived probability of detection and attitudes towards tax resistance (attitudes towards noncompliant behaviour).

A review of the experimental research by Fischer et al. (1992) illustrated the inconsistencies of the reported findings. A number of studies reviewed failed to observe any significant positive relationship between the probability of detection and tax compliance behaviour (for example, Friedland et al., 1978; and Spicer & Thomas, 1982). Among studies reviewed that compared the relative effectiveness of increased probability of detection with monetary fines, three studies provided weak evidence that fines are more effective than detection probability (Friedland et al., 1978; Jackson & Jones, 1985; and Chang et al., 1987), with one study (Friedland, 1982) indicating detection probability to be more influential in increasing compliance than increased monetary fines.

Fjeldstad and Semboja (2001) found that compliance is positively related to perceived probability of being prosecuted (including the number of tax evaders known personally to the participants) and the ability to pay. Severity of sanctions, which was also examined in this study, appears to lead to more resistance towards paying tax.

Varma and Doob (1998) explored the utility of Deterrence Theory by examining survey data in order to determine the effect of sanctions on tax evasion. The findings from their study indicate that perceived penalties are not as important to decisions about evading as are perceptions of the possibility of being apprehended (or caught) for the noncompliant act. The study suggests that strategies of deterrence based upon penalty size may not be effective if taxpayers perceive there is no risk of being apprehended; therefore, harsher penalties will not deter people from evading taxes.

Punishments can refer to anything from formal warnings to imprisonment. In Economic Deterrence Models, penalties are assumed to deter undesired behaviour, such as tax noncompliance (Allingham & Sandmo, 1972). In the current study punishment refers to monetary fines imposed on a range of noncompliant behaviour.

The pioneering experimental work of Friedland et al. (1978) used variables such as punishment rate, audit probability, and tax rates to determine compliance level. The results show that higher punishment rates seem to be more efficient in limiting evasion than higher audit rates. In contrast, a follow-up experiment did not find the effect of punishment or fines to be more influential than the effect of audit rates on compliance behaviour (Friedland, 1982). Two decades later Park and Hyun (2003) undertook a similar study. Consistent with the findings of Friedland et al. (1978), the results of this study found that compliance

increased both with an increase in audit rate and increased fines. However, elasticity of fines was much higher than the elasticity of audit rates.

In another experiment, Webley et al. (1991) investigated the effects of severity of fines and audit rates on compliance. Severity of fines had no effect on the frequency of income underreported, although the frequency of underreported income was higher when the audit probability was low. In terms of the mean percentage of income not declared, both audit probability and severity of fines had some influence on compliance. In contrast to Friedland et al.'s (1978) experiment (which found penalties to be more effective than audit rates), Webley et al.'s (1991) study found the audit effects to be more influential than the effects of penalties or fines. Alm et al. (1995) conducted an experiment to investigate the impact of fines and audit rates on compliance behaviour. Consistent with prior experiments, their study found fine rates together with audit rates to significantly influence tax compliance behaviour. Further, the results also indicate fine rates to be more effective than audit rates in influencing compliance.

Whilst the main purpose of the experimental research by Maciejovsky et al. (2001) was to investigate whether traders on an experimental asset market form different and separate mental accounts for sales revenues and dividend earnings, the secondary objective of the study was to investigate the effect of an increase in tax penalty as well as an increase in audit rates on tax compliance. The results establish tax penalties to be positively related to tax compliance behaviour. The results further suggest that the higher the tax penalty and the audit frequency, the higher the relative frequency of declared income.

Jackson and Milliron's (1986) comprehensive review of literature found the influence of severity of punishment on tax compliance level to be inconclusive. Another comprehensive review carried out over a decade later found that despite numerous findings providing evidence of positive relationships between the threat of penalties and tax compliance behaviour, a significant number of studies continued to observe no relationship between these two variables (Richardson and Sawyer, 2001).

Some taxpayer surveys found no significant relationship between tax penalties and taxpayer compliance (for example, Spicer & Lundstedt, 1976; Mason & Calvin, 1984; Brooks & Doob, 1990; Collins et al., 1992; and Hasseldine et al., 1994). Other studies found increased compliance as penalties increased (De Juan et al., 1994; and Carnes & Englebrecht, 1995), but this applied only for certain groups of taxpayers (Schwartz & Orleans, 1967; and Witte & Woodbury, 1985). In contrast, results from other survey studies displayed a negative link between penalties and tax compliance, that is, the level of compliance decreased as the

perception of penalties increased (Grasmick & Green, 1980; Richards & Tittle, 1981; and Devos, 2009).

In a study that compared economic with noneconomic factors, Schwartz and Orleans (1967) examined the influence of the threat of penalties and moral appeals. The results clearly demonstrate that moral appeals have a significant effect on compliance, and are more effective than threats of penalties. This outcome highlights the importance of noneconomic variables in tax compliance research.

A study by Van Prooijen et al. (2008) incorporated procedural fairness elements into the sanctions variables. Whilst the study found the effectiveness of sanctions are contingent upon the presence of procedural fairness, the results also suggest that the type of sanction system is an important determinant, of whether people will comply with the authority's decisions. They argue that severity of the sanction upon getting caught is an important variable that defines differences between sanction systems. This is consistent with Procedural Justice Theory (PJT) (Tyler, 2010), which contends that taxpayers will accept the fines imposed through a system that was perceived to be procedurally fair.

2.4.2 Informal Sanctions (Non-Legal Sanctions)

To address the criticism levelled at the Allingham and Sandmo (1972) Model, several researchers have argued that tax morale, which is seen as the intrinsic motivation to pay taxes, could play a part in explaining the high degree of tax compliance (Schwartz & Orleans, 1967; Lewis, 1982; Roth et al., 1989; Pommerehne et al., 1994; Frey, 1997; Frey & Feld, 2002; Feld & Tyran, 2002; Frey & Torgler, 2002; and Frey, 2003). Although the importance of tax morale has been highlighted in literature, the concept of tax morale has not been explicitly defined and operationalised, and measures used in empirical work are rather varied (Kirchler, 2007). This view is supported by Feld and Frey (2002) who observed that most studies treat tax morale as a black box, and these studies have failed to discuss the concept of tax morale or how tax morale may arise. Kirchler (2007) is often critical of studies which group unknown influences on tax evasion under the concept of tax morale.

One of the earlier studies of tax morale is by Schmölders (1959), which used the subjective tax burden as an indicator of the level of tax morale, and found that self-employed people had lower tax morale than employees. Tax morale was analysed together with the tax system, which revealed that treating taxpayers with care helps to cultivate tax morale and reduce tax compliance costs (Strümpel, 1969). However, it was only in the last decade that an increase in interest in tax morale emerged (Torgler, 2007). This is partly triggered by the need

to find out why people pay their taxes although fines and the probability of an audit are low. The results of an experimental study conducted by Alm et al. (1992) reveal that the economics-of-crime approach does not necessarily explain taxpayer compliance. Their study found a diversity of compliance behaviour, and a range of reasons why some comply while others do not. Compliance seems to exist even when there is no possibility of detection, and conversely, some evasion exists when the expected value of the evasion gamble is negative. Erard and Feinstein (1994) suggested adding moral sentiments into the tax compliance models to provide a reasonable explanation of actual compliance behaviour. Andreoni et al. (1998, p.852) caution that adding moral and social dynamics to tax compliance models is "as yet a largely undeveloped area of research."

In one of the earliest comprehensive reviews of tax literature, moral principles or values (also referred to as tax ethics) about tax compliance were found to be relatively weak (Jackson and Milliron, 1986). The review found taxpayers were generally uncertain about whether tax cheating, especially if it involves small amounts, is morally wrong.

In a study regarded by many as the seminal work in this field, Schwartz and Orleans (1967) applied an experimental design to examine the taxpaying behaviour of upper and middle income earners. The study compared the effects of appeal to moral conscience and an increased threat of legal sanction on compliance behaviour. While both mechanisms improved compliance, appeal to conscience (or tax morale) proved more effective than legal threat. This is perhaps the earliest evidences of the importance of noneconomic variables in tax compliance research.

In studies grounded in the TPB, Beck and Ajzen (1991) and Trivedi et al. (2005) empirically tested the predictive power of moral obligations. Beck and Ajzen (1991) found the addition of moral obligations into their research model increased the predictive power of their research model. Additionally, moral obligations and attitude were found to be significantly correlated. Trivedi et al. (2005) tested the relationship between ethics (grounded in the Theory of Moral Reasoning (TMR)),[41] and behavioural intentions and behaviour. However, no significant effects were observed for both of the relationships (that is, the link between ethics and behavioural intentions, and between ethics and behaviour). Interestingly, the outcome seems to suggest that moral values have no effect on taxpayers' intentions to comply (or not comply), nor on tax compliance behaviour.

[41] Kohlberg, L. (1969) Stage and Sequence: The Cognitive-Development Approach to Socialization. In D. Goslin. (eds.), Handbook of Socialization Theory and Research, (pp. 345-480). Chicago: Rand McNally.

Studies by Roberts (1994) and Hite (1997) examined the influence of moral appeal messages on tax compliance behaviour. Both studies demonstrated the effectiveness of moral appeals in increasing tax compliance. Trivedi et al.'s (2003) study explained why Canadians and Americans comply with their tax obligations despite low audit and penalty rates. The study demonstrated that tax compliance is a complex decision, influenced not only by economic considerations but equally influenced by a number of personal conditions, such as moral reasoning. Hasseldine and Kaplan (1992) measured respondents' hypothetical tax evasion behaviour after exposing them to some moral appeals messages. Although subjects exposed to the moral messages believed tax evasion was immoral, the results indicate that the relationship between tax compliance and moral appeals was inconclusive. McGraw and Scholz (1991) examined the effect of moral messages on attitudes and compliance behaviour and found mixed results. Although the messages had an impact on tax-specific attitudes, it did not display any direct effect on compliance levels. A number of later studies on the effect of moral persuasion on tax compliance behaviour did not achieve any significant results (for example, Hasseldine et al., 2007). Weck (1983, quoted in Torgler, 2007), on the other hand, found a negative correlation between tax morale and the size of the shadow economy (which also reflects noncompliant activities).

Richardson (2006) examined data from 45 countries to determine the effects of a number of key determinants of tax compliance identified by Jackson and Milliron (1986). The results indicate that noneconomic determinants exert the strongest impact on tax evasion in comparison with economic determinants. Although complexity was found to be the most important determinants, tax morale (or moral values) was also found to be significant across the 45 countries. Tax morale was defined as "the moral principles or values individuals hold about paying taxes" (Torgler & Murphy, 2004, p. 301, quoted in Richardson, 2006).

Feelings of guilt, also referred to as tax morale, may influence taxpayers' reporting behaviour and reduce the perceived benefits of cheating (Torgler, 2007). Lewis (1971) adds that individuals experience feelings of guilt when they realise that they have acted irresponsibly and in violation of a rule or social norm that they have internalised. If the obligation of complying with an individual's tax obligations is an accepted social norm, individuals who decide not to comply may feel guilty as a result (Torgler, 2007). A study by Aitken and Bonneville (1980) found that more than half of the respondents surveyed agreed that their consciences would be affected if they engaged in noncompliant behaviour.

Data from a survey conducted by Grasmick and Scott (1982) indicated that approximately one quarter of the sample had engaged in noncompliant behaviour, while a third indicated

intentions to not comply in the future. The study found that whilst the relationship between the threat of legal punishment (detection probability) and intentions to evade taxes in future were statistically significant, anticipated feelings of guilt and social stigma related to the noncompliant behaviour were more strongly related to deterrence. The study also provided evidence that feelings of guilt can be a powerful form of self-sanctioning.

A later study by Grasmick and Bursik (1990) provided evidence supporting the effects of feelings of guilt and shame in tax compliance decisions. The findings from these studies suggest that taxpayers who experience guilt feelings towards tax evasion tend to be more compliant. The findings also illustrate that guilt is associated with committing tax evasion, and acts as a stronger deterrent than the perceived threat of legal sanctions. This follows that when people engage in noncompliant behaviour, they are more likely to feel a sense of shame and guilt (self-imposed), which prevents further noncompliant behaviour. A similar outcome was found by Stalans et al. (1989). Their study discovered that taxpayers' perceived likelihood of feeling guilty was the largest predictor of future intentions, although further analysis found taxpayers with high structural opportunity to cheat were less likely to feel guilty if they engage in tax cheating compared to taxpayers with lower structural opportunities. In contrast, Thurman's (1991) study yielded inconclusive results. The study examined the effects of guilt feelings on tax compliance behaviour, but failed to observe any significant effect.

Kinsey (1992) added a guilt variable measured as 'the likelihood the respondent would feel guilty if he or she underreported income or overstated deduction'. The guilt variable was found to have a significant effect on the likelihood of future cheating. Erard and Feinstein (1994) introduced measures of shame and guilt into their study, which are supposed to reduce peoples' perceived gains from not complying. The premise is that taxpayers feel guilty when they underreport and the underreporting was not detected, and also feel ashamed when they get caught for underreporting. Bobek and Hatfield (2003) examined the effect of guilt feelings within the TPB framework. Beliefs about feeling guilty (together with engaging in illegal behaviour) were consistently related to compliance intentions across the three scenarios used for the study.

Tax morale is also linked to the concept of civic duty (Orviska & Hudson, 2002). Civic duty relates to individuals' motivation to comply, based on a sense of responsibility and loyalty to the nation or society, and not simply based on the need to maximise their own self-interest. This follows that an individual with a strong sense of civic duty will tend to be compliant and will co-operate with the authority, even when the system provides

opportunities for noncompliance. Taxpayers with high levels of civic duty are therefore not regulated by external factors such as audits and sanctions, but by internal factors, such as their concern for society. Therefore willingness to comply can be attributed to a strong sense of civic duty.

Empirical findings from Scholz and Pinney (1995) demonstrate that taxpayers' sense of duty to comply with their tax obligations significantly influences the perceived probability and risk of being caught for cheating. The findings suggest that the subjective risk of getting caught is more closely associated with a sense of duty than with objective risk factors. Interestingly, duty and fear were found to significantly increase when taxes decrease, and decrease when taxes increase (Scholz & Lubell, 1998). This suggests that a person's "attitude towards compliance with a collective obligation and his or her fear of retribution varies according to changes in costs or benefits associated with the collective" (Torgler, 2007, p. 69).

A survey carried out by Orviska and Hudson (2002) empirically examined attitudes towards tax evasion. The analysis of the survey data suggests that evasion is condoned by a large proportion of the population. The results also indicate that the consequences of being caught appear to deter some from not complying. Evidence is also provided which highlights the importance of civic duty and 'law abidance' in deterring tax evasion.

In summary, conceptually, both the formal and informal sanctions approaches have been used in prior research to explain tax compliance behaviour in various situations, based on the deterrence assumptions. The deterrence doctrine is based on Perceptual Theory (that is, perception). Whether the threat of punishment deters depends not on the certainty, or severity of punishment in any objective sense, but on the potential offender's perception of these deterrent factors (Gibbs, 1986). Similarly, the threat of being punished for violating normative rules (personal, social and societal norms) or tax morale depends on the perception of the punishment imposed if the individual does not conform to personal, important referents', or society's expectations, or norms. The experience of being deterred from evasion is real but private, that is, it is known only to the taxpayer, and is not observable or known to others (unlike a traffic offence which is highly visible).[42] Under the naming and shaming principle, the New Zealand and Australian tax authorities previously provided for the publication of names for certain tax offenders; however, these provisions have since been repealed.

[42] Tax noncompliance behaviour is not observable and penalties imposed (monetary and non-monetary) are only known to the taxpayer who was penalised, and therefore these activities remain private (unless the case was litigated through the courts).

Consistent with other studies (for example, Alm et al., 1995), the current literature demonstrates that the economic variables do not go very far in explaining tax compliance behaviour. Instead, psychological factors appear to offer some promising areas for future research on compliance behaviour. While the empirical research is inconclusive, it does appear to support the hypothesis that noneconomic variables, or tax morale such as feelings of guilt, sense of civic duty, and moral values are emerging as important determinants of tax compliance behaviour. However, it is still obvious that deterrence based on both formal and informal sanctions is equally important for any successful strategy to encourage and manage a high level of compliance from taxpayers.

2.5 PROCEDURAL JUSTICE

The PJT concept refers to people's perception or evaluation of whether the procedures and the enactment of procedures by authorities when making decisions are fair (Thibaut & Walker, 1975; Leventhal, 1980; Lind & Tyler, 1988; and Tyler, 2010).

Although PJT was developed in the 1970s, it was not used in the tax compliance domain until the late 1980s. McGraw (1989) was the first researcher to apply PJT to examine tax compliance behaviour. The survey examined taxpayers' perceptions of procedural justice, with regard to the treatment and services received from the IRS. The study found significant correlation between perceptions of procedural justice and evaluation of the performance of the IRS. Although McGraw's (1989) study did not examine any direct effects of procedural justice on tax compliance behaviour, the study demonstrated that procedural justice concerns are also important in tax compliance research.

Another study predicted that taxpayers would respond to positive treatments by becoming more compliant (Smith, 1992). Although no direct relationship was found between procedural fairness and tax compliance behaviour, the findings support the prediction that reciprocity is related to taxpayers' perceptions of procedural justice, which in turn is found to be significantly related to taxpayers' acceptance of noncompliance. That is, an increase (or decline) in perceived procedural fairness of the IRS results in noncompliance becoming more unacceptable (acceptable), which supports the premises of the PJT.

Wenzel (2002a) used survey data to examine the influence of justice perceptions (based on PJT) and self-interest (based on Distributive Justice Theory) on self-reported tax compliance.

The Self-Categorisation Theory (SCT)[43] (which complements the group-value approach[44] to PJT), contends that taxpayers are more concerned about justice and less about personal outcomes when they identify strongly with the nation within which the procedures and distributions apply. Consistent with the PJT (and SCT), the survey results demonstrate that respondents who identify themselves as Australians and experience fair and respectful treatment from the Australian Tax Office (ATO) tend to be more concerned about procedural justice and less about their own personal outcomes. However, this effect was displayed for only two out of the four forms of tax compliance used for this study.

A further study by Wenzel (2002b) explored the effectiveness of procedural fairness on taxpayers' filing obligations. All subjects in the study had failed to file their tax returns within the required timeframe, and therefore, for the purposes of the study were deemed to be non-compliers. Three different types of reminder letters were issued on subsequent lodgement compliance. The first letter was the tax authority's standard letter, whereas the other two incorporated aspects of procedural fairness, which included: consideration and respect; and information about respondents' obligations and justification for the tax authority to pursue them to file their returns. The results indicate an increase in filing compliance from taxpayers who received reminder letters based on procedural fairness, as compared to those who received the standard reminder letter.

A number of studies found that sanctions or punishments applied without ensuring the process is procedurally fair can undermine the regulator's (or tax authority's) legitimacy, resulting in resistance towards the regulator leading to noncompliance. In Murphy's (2003a) study, data was collected from the general taxpayers and tax scheme investors. Results found that the wide-spread resistance by scheme investors was attributed to how the ATO dealt with the schemes issue. Those who invested were: more disillusioned with the tax system; more hostile and resistant towards the ATO; and more likely to resent paying tax as a result. This could be attributed to the investors' perception that the procedures used to handle the situation were unfair, which in turn may have resulted in the negative attitude towards the tax authority. The results of the study suggest that procedural justice is an important factor in the perceived legitimacy of the tax authority, which in turn will positively influence taxpayers' attitudes towards the tax authority and tax compliance, and ultimately influence their tax reporting behaviour.

[43] Self-Categorisation approach assumes that distributive justice involves categorisation processes on various levels of abstraction. Central to this is the inclusive category of all those considered potential recipients of the distribution (Wenzel, 2002a, p. 631).

[44] Group-Value Model contends that the degree of identification with a group shapes the degree to which individuals develop supportive attitudes, values, and consequently behaviour (Hartner et al., 2008, p.140).

In a further study, using data from in-depth interviews with 29 investors of the mass-marketed schemes, Murphy (2003b) explored the investors' perceptions of the way the ATO handled the mass-marketed tax effective schemes, and the reasons why the majority of investors resisted the ATO's demands that the investors pay back taxes. The findings reveal that the reason many of the investors defied the ATO's demands was because of the perceived unfair procedures adopted by the tax authority in addressing the tax situation. This study clearly demonstrates that the use of enforcement strategies (such as sanctions and punishments) to achieve compliance can weaken the tax authority's legitimacy if it is perceived to be procedurally unfair.

Using longitudinal survey data, Murphy (2005) examined the ATO's approach in regulating and punishing taxpayers involved in aggressive tax planning, and its effects on the long term voluntary compliance behaviour of the tax offenders. The aim was to empirically explore whether procedural justice and legitimacy influence future cooperation and compliance. Subjects were participants of Australian mass-marketed tax schemes, who had been accused by the ATO of aggressive tax planning.[45] Overall, the results indicate that taxpayers' perceptions about their treatment by the ATO appear to influence their views about the legitimacy of the tax authority, followed by their judgments about gain or loss. The findings provide general support for the PJT (Tyler, 1997) in that perceptions of procedural justice influence views about legitimacy more than judgments about gain and loss. The results also indicate that legitimacy views can affect attitudes towards compliance, as well as compliance behaviour, more than judgments about gain and loss.

Perceptions of procedural injustice can also create disputes and resistance between authorities and regulatees. Murphy (2004) found that during disputes with the tax authority, taxpayers who perceived that the tax authority had handled their cases in a procedurally unfair manner were more likely to increase their resistance, compared to other taxpayers. Murphy (2004) also found that these perceptions seem to overshadow the influence of the economic self-interest factors. The findings demonstrated that the use of threats and legal coercions as regulatory tools are ineffective in encouraging compliance. Murphy (2004) suggests that if regulators are seen to be acting fairly, regulatees will defer to the regulators' decisions voluntarily.

[45] Many taxpayers not involved in the scheme felt that the situation was handled in a procedurally unfair manner by the ATO (Murphy, 2005).

Van Dijke and Verboon (2010) examined the effect of procedural fairness of the tax office on voluntary tax compliance.[46] Their study also explored the moderating effect of trust in authorities on procedural fairness. Whilst the results did not reveal any direct relationship between procedural fairness of the tax office and tax compliance behaviour, the results, nonetheless, demonstrated that general trust in the tax authority has to be present, and it is this trust which then determines the effectiveness of the fair enactment of procedures of the tax office.

One of the few studies that failed to find an increase in tax noncompliant behaviour, when taxpayers were subjected to procedural injustice in relation to the tax authority, was that of Worsham (1996). This study, based on an experimental design, examined the effect of the accuracy and consistency rules on tax compliance, and found that the procedural injustice experienced personally did not lead to increased noncompliance. In contrast, knowledge of procedural injustice of the treatment experienced by others resulted in increased self-reported noncompliant behaviour.

Porcano's (1988) research also did not find any significant relationship between procedural justice and intentions to comply. The study operationalised procedural justice as having some involvement in formulating tax law and in enforcement procedures applied by the tax authorities. While procedural fairness was not significantly related to future intentions (to comply or not to comply), procedural fairness was found to be significant for past behaviour. This may perhaps suggest that past noncompliant taxpayers may use procedural injustice to rationalise their noncompliant behaviour, or as suggested by Kirchler (2007), the outcome could be attributed to the possible effect of the additional variables examined by Porcano (1988) on the self-reported tax evasion.

The study by Braithwaite et al. (1994) examined the effects of poor treatment of nursing home managers by authorities. Inspectors visited the nursing homes over a 20-month period to determine whether or not the managers complied with certain nursing home standards. The study found that the compliance level of the managers who were treated with trust and respect appeared to improve in the two years following the initial inspection. Although this study does not relate to tax compliance behaviour, it nonetheless demonstrates the role of procedural justice in regulating general compliance behaviour.

In other studies, aspects of procedural justice were also found to influence compliance intentions (for example, Kirchler et al., 2006). In this study procedural justice refers to

[46] The study was conducted in the Netherlands and therefore the study was based on the perceived procedural fairness of the Dutch tax office.

perceived supportiveness of advice by tax officers which they found correlated with self-reported compliance, which in turn influenced compliance behaviour. Some studies illustrated the indirect effect of procedural fairness on tax compliance behaviour. For example, Murphy (2003c) found procedural injustice to indirectly influence tax noncompliance, through the mediating effects of shame displacement and disengagement. Although Murphy (2003c) does not advocate abandoning the use of sanctions and penalties, recommendations were made for the use of a regulatory strategy based on mutual respect and cooperation together with the threat of punishment.

In summary, tax compliance research based on aspects of procedural justice is still relatively in its infancy (Franzoni, 2000).[47] The few tax studies based on PJT have identified procedural justice or fairness as important factors in the tax authority's relationship with the taxpayers. The literature also seems to suggest that taxpayers are more concerned about being treated fairly by the authority, rather than what they do or do not receive from the authority. It is therefore clear that the fair procedures and processes will secure legitimacy for the tax authority, which will lead to taxpayers being willing to accept the tax authority's rules and decisions (Tyler, 2010). Overall, the literature review on studies applying PJT overwhelmingly demonstrate that procedural fairness is an important element in an individual's attitude towards tax compliance and also plays an important role in an individual's tax compliance behaviour.

2.6 SOCIETAL NORM (OTHERS' TAX COMPLIANCE BEHAVIOUR)

For the purpose of this research societal norms refer to injunctive norms; that is, normative prescriptions regarding tax compliance (or the normative acceptability of noncompliance), and perceptions of what other people believe is appropriate or inappropriate (Cialdini et al., 1991). The premise is that perceived prevalence of tax noncompliance among a reference group could influence individuals' taxpaying behaviour.

One of the earlier studies to examine societal norms was a Swedish study by Vogel (1974). The study attempted to find out the reasons why people evade taxes. Approximately 74 percent of respondents who admitted to past noncompliance agreed with the statement "since tax fraud is so common one cannot be blamed for evading taxes" (Vogel, 1974, p.505). The findings indicate that one of the reasons why people do not comply with their tax obligations is because of their perception that tax cheating is common, and therefore believe that the

[47] The literature review undertaken for this study found a dearth of tax compliance studies grounded in procedural justice theory, leading to the assumption that there has not been much progress in this area.

majority of taxpayers are noncompliant. This perception allows taxpayers to rationalise their own noncompliant behaviour.[48]

Findings from Song and Yarbrough's (1978) survey reveal that perceptions of others' honesty were directly related to taxpayers' ethics (which in turn influenced tax compliance behaviour). The study found that 74 percent of people felt that some or most taxpayers intentionally over-claim deductions. Furthermore, 64 percent of respondents believed that some or most people do not fully report all their taxable income. The findings indicate that tax evasion by individuals is influenced by a person's perception of the tax evasion of others.

Kinsey (1984) reviewed seven studies which examined the relationship between reported noncompliance and knowledge of others not complying with their tax obligations. The findings across all seven studies indicate that noncompliant taxpayers have knowledge of others who evade taxes. In some cases, Kinsey found evidence of networks of noncompliant taxpayers. The findings suggest that the knowledge that others do not comply may result in the perception of noncompliance being the norm. This may lead to increased noncompliance.

Thurman et al. (1984) maintain that perceptions of prevalence of tax cheating in the community may lead compliant taxpayers to question their own continued compliance. Their study provides evidence that individuals will use their perceptions about the prevalence of noncompliance by the general public to justify their own future noncompliance. This is achieved by reducing the guilt feelings associated with tax noncompliance by adopting a neutralisation strategy.[49]

A review of tax compliance literature carried out by Sheffrin and Triest (1992) provides further support to the relationship between the perceived prevalence of tax noncompliance and noncompliant behaviour. A number of studies reviewed demonstrated that if taxpayers perceive higher noncompliance by others, their own noncompliance will be higher too. This is because any guilt or stigma arising from the noncompliant behaviour is reduced or mitigated, when a large number of other taxpayers are perceived to not comply with their tax obligations.

Kaplan and Reckers (1985) included a further factor in their study of societal norms, which was the taxpaying behaviour of taxpayers with high moral character. The study examined the effect of tax noncompliant behaviour by people who were considered to have

[48] This rationalisation behaviour is explained by Neutralisation Theory (refer to, Richardson & Sawyer, 2001).

[49] Neutralisation Theory predicts that guilt feelings can be minimised by neutralisation strategies which allow the individual to justify guilt-producing behaviour (Thurman et al., 1984).

high moral standing in society on other taxpayers' compliance behaviour. The results reveal that taxpayers who observed the tax evasion behaviour of taxpayers of high moral standing were more likely to not comply with their own tax obligations. The results suggest that taxpayers may have viewed the behaviour of people with such high moral standing as the social or societal norm, or as a reference for their own behaviour. The outcome may also be the result of taxpayers rationalising their own noncompliant behaviour.

Spicer and Hero (1985) tested the hypothesis that a taxpayer's own level of evasion will be positively related to what (s)he perceives as the levels of evasion by others. The study also examined whether taxpayers who have been audited in the past are likely to evaluate the probability as higher, leading to a decrease in the levels of noncompliance. However, the experiment did not provide any evidence to demonstrate that a taxpayer's tax evasion behaviour is significantly influenced by knowledge of other taxpayers not complying. The authors attribute this outcome to the lack of any stigma effects in the experimental setting. Arguably, the behaviour depends on the presence or absence of 'social stigma' attached to tax evasion behaviour.

De Juan et al. (1994) provide evidence of the relationship between individuals' own tax noncompliance and the perceived noncompliance by others. Their study found that individuals who believe that noncompliance is widespread among their peers or colleagues tend to have more favourable attitudes towards noncompliance, and are also more likely to cheat on taxes themselves. These findings suggest that taxpayers' compliance behaviours may be influenced by perceived social norms.

Welch et al. (2005) examined the effects of perceived community levels of tax evasion on intentions to evade taxes in the future.[50] The results provide empirical evidence that individuals who perceive that many members in the community cheat on their taxes are likely to not comply with their tax obligations. The results also reveal that individuals who believe that tax cheating is morally wrong, and those who fear the social disapproval that cheating might produce, appear to be less predisposed to cheat on their taxes.

A study to determine whether tax ethics and social norms constitute motivation for tax compliance or whether they are rationalisations for self-interested behaviour, was carried out by Wenzel (2005a). Perceived social norms refer to injunctive norms; that is, normative prescriptions regarding tax compliance (or the normative acceptability of noncompliance),

[50] The study also examined the effects of perceived prevalence of tax evasion on individuals' evaluation of the wrongfulness of tax evasion, and the inhibitory effects of informal sanctions directed at it.

and perceptions of what other people believe is acceptable behaviour.[51] One of the objectives of this study was to determine whether social norms causally affect taxpayers' compliance levels, when taxpayers identify strongly with the relevant social group (that is, identifying with Australians). The study provides evidence that perceived social norms causally influenced the tax ethics of respondents who identified strongly with the social group. The study also revealed that individuals' personal ethics influenced the perceived normative beliefs of the social group, and that perceived norms causally influenced tax compliance. Conversely, tax compliance appeared to affect the perception of norms. The results illustrate the complex influence of tax ethics and social norms on compliance behaviour.

A common justification for tax cheating and tax evasion is because of individuals' perceptions or beliefs that everyone does it, and so they are able to rationalise their own noncompliant behaviour (Bardach, 1989). This widespread perception of others cheating on their taxes may lead taxpayers to follow that particular social norm (of tax cheating), even if they might personally think that everyone should comply with their tax obligations (Wenzel, 2005b). In contrast, an Australian study appears to indicate that taxpayers are compliant even if they believe others are not compliant (Braithwaite et al., 2001).

Sandmo (2005) argues that tax evasion decisions may be influenced by the individual taxpayer's perception of the tax compliance behaviour of others. The more widespread they perceive noncompliance is, the more socially acceptable noncompliance may become, and the subjective probability of noncompliance being detected will probably be low. This may encourage compliant taxpayers to attempt to evade some of their taxes or noncompliant taxpayers to evade more.

To sum up, the limited amount of empirical evidence suggests that societal norms have an important influence on taxpayers' compliance behaviour. The shared belief of how people should behave reflects society's social norms (Torgler, 2007), and the perceived norms of society influence the way members of the society behave. In a tax context this means that people will comply and pay taxes as long as they believe that complying with their tax obligation is the expected norm (Alm et al., 1999). The limited literature reviewed is consistent with the observation that society's tax compliance norm will influence individual's tax compliance behaviour.

[51] Injunctive norm refers to the perceived behaviour, of which, most people approve (or disapprove). In contrast, subjective norms refer to perceptions of injunctive norms held by referents (Bobek et al., 2007b).

2.7 PERCEPTIONS OF TAX OFFENCES

A large number of prior studies have examined the relationship between perceived severity of noncompliance and taxpayers' compliance behaviour, but only a few studies have examined taxpayers' perceptions of the seriousness of tax noncompliance, relative to other similar civil offences. The general view is that tax evasion is not seen as a serious offence.

Song and Yarbrough's (1978) study was one of the earlier studies which examined the respondents' view of the severity of tax offences compared to eight other crimes/offences. The findings revealed that 87 percent of respondents agreed that tax noncompliance is an offence. At the same time, most also agreed that noncompliance does not hurt anyone except the government. The majority of respondents did not rank tax evasion as being particularly serious, compared to other crimes/offences listed in the questionnaire. Respondents seemed to view tax evasion more like a violation than a crime (violations are punishable by fines, and crimes are generally punishable by jail sentences). Song and Yarbrough (1978) concluded that respondents viewed tax evasion only slightly more seriously than stealing a bicycle. Wilson et al. (1986) based their study on Song and Yarbrough's (1978) research, and provided further support that tax evasion is not considered to be a serious crime. Respondents were asked to compare the seriousness of 13 offences with the offence of 'stealing a bicycle'. The findings indicate that tax evasion was viewed to be six times more serious than stealing a bicycle, and about the same level of seriousness as committing medical fraud, but less serious than social security fraud.

The first New Zealand study to compare the perceived seriousness of tax noncompliance was undertaken by Oxley (1993). The study surveyed female taxpayers in order to determine how they view the seriousness of committing a tax crime. The findings indicated that ten percent of women respondents viewed tax evasion as an extremely serious offence, in comparison to cashing a stolen cheque, theft from an employer, shoplifting, welfare fraud, and insurance fraud. The rest did not consider tax evasion as an extremely serious offence.

Another New Zealand study surveyed tertiary students to examine the students' perception of the seriousness of evading tax, compared to five other similar crimes (McIntosh & Veal, 2001). The results revealed that 16 percent of respondents felt that tax evasion was totally acceptable, with 30 percent of the respondents indicating that tax evasion was totally unacceptable, compared to cheque fraud, theft from an employer, shoplifting, welfare fraud and insurance fraud. The results of this study further revealed that a large number of respondents believe that noncompliance has increased over the years in New Zealand.

McIntosh and Veal's (2001) research was adapted for use in another New Zealand study by Birch et al. (2003). This research also surveyed tertiary students, and the findings were consistent with McIntosh and Veal (2001). The study found 14 percent of the respondents considered tax evasion to be totally acceptable, with 25 percent who believed tax evasion to be totally unacceptable, compared to the same list of offences listed in the previous two New Zealand studies. The above outcomes clearly indicate that New Zealand respondents do not believe that tax evasion is a very serious crime. Devos (2005) examined Australian tertiary students' attitudes toward tax evasion, and found that about 65 percent were undecided as to whether tax evasion was a serious offence.

A US study by Eicher et al. (2002) investigated the perception of tax evasion against four non-violent offences. Respondents rated driving while intoxicated as the most serious offence, followed by running a red light, shoplifting, and speeding, in that order. The tax offence was rated as equal in seriousness with shoplifting, indicating general acceptance that committing a tax offence is not a comparatively serious crime. Karlinsky et al. (2004), in another US study, examined the perceived seriousness of tax evasion relative to other crimes. Their study included violent crimes (such as murder, rape and child molestation), blue collar crimes (such as shoplifting, carjacking and bicycle theft), and white collar crimes (such as accounting fraud, welfare fraud and insider trading). The most serious offences rated were the violent crimes. In terms of tax evasion, consistent with Eicher et al. (2002), respondents did not perceive tax evasion as a particularly serious crime.

A later New Zealand study (Gupta, 2006) examined the seriousness of a tax offence, against a number of criminal offences (such as murder, rape and child molestation) and a number of other offences. Consistent with the US studies (for example, Karlinsky et al., 2004), the most serious offences rated were the violent crimes. In terms of the non-violent offences, tax evasion was rated the third most serious crime, behind driving under the influence of alcohol and welfare fraud, but ahead of speeding, bicycle theft and drug offence (Gupta, 2006; 2007).

Overall, the results from prior studies consistently demonstrate that tax evasion is considered by most as a comparatively less serious offence compared to other similar offences. Some respondents even believe that other civil offences should attract harsher penalties than tax evasion (Vogel, 1974). Results from New Zealand and other tax jurisdictions overwhelmingly indicate that tax evasion is not totally unacceptable, compared to other minor offences, indicating that this is a universal problem and is not based on culture or nationality. Taxpayers clearly consider violent crimes to be more serious than tax offences;

however, it remains a concern for the tax authorities that tax offences are also ranked lower than other similar crimes.[52] Porcano (1988) concluded that the individuals who perceive noncompliance to be an insignificant crime tend to be less compliant, which is a highly relevant finding when examining tax compliance behaviour.

2.8 MOTIVATIONAL POSTURES (SOCIAL DISTANCE)

Motivational postures are stances that individuals, who are subjected to regulatory requirements by a regulatory authority, adopt in order to protect themselves from threats to comply (Braithwaite, 2003b). At the individual taxpayer's level, motivational postures are influential factors of compliance and noncompliance, while at the national level, tax morale and civic duty are the motivational forces leading to, or deterring, taxpayers engaging in noncompliant behaviour (Kirchler, 2007). Motivational postures reflect the social distance that individuals place between themselves and the tax authority (Braithwaite, 2003b). Taxpayers who dislike the tax authority tend to place increasing social distance between themselves and the tax authority, and a lowering of the status attributed to that authority.

Braithwaite (2003a) carried out a survey to examine the influence of motivational postures that people adopt, in relation to the tax authority, on compliance behaviour. Correlations were calculated between motivational postures and two compliance-related activities (evasion related and avoidance related). The results suggest a correlation between some evasion-related activities and postures of resistance to, and disengagement from, the tax system. Those who indicated postures of deference (for example commitment and capitulation), however, did not refrain from engaging in behaviour that could get them in trouble with the tax authorities.

In terms of the avoidance-related activities, the deference posture (commitment) did not deter individuals from investing in tax-minimising activities. Individuals who are committed to paying taxes are less likely to be involved in the more aggressive forms of tax minimisation. Two postures, resistance and game playing, were most strongly related to aggressive tax minimisation. The results suggest that individuals, who dislike taxation but can be defiant within the letter of the law, prefer to engage in avoidance, whereas those who dislike taxation and have located themselves outside the reach of the law prefer to engage in evasion.

[52] Tax offences are considered by many to be a victimless crime (quoted in Gupta, 2007) and that may explain some of the outcomes from these studies.

In a study conducted by Taylor (2003), one of the hypotheses tested the influence of perceived representation of government and the tax authority on motivational postures. The premise is that if the government and the tax authority are perceived to be representative of the regulatees they are attempting to regulate, the regulatees will be more likely to adopt compliant motivational postures. The findings supported the hypothesis that the more representative the government and the tax authority are perceived to be (of individual respondents), the less resistant and more compliant are taxpayers' motivational postures.

Studies carried out by Braithwaite et al. (2007) have attempted to establish how taxpayers manage the threat of taxation,[53] not only in circumstances where taxation is a routine affair, but also where conflict is occurring between the taxpayer and the tax authority. The study also examined how well the key components of posturing (the coping sensibility that individuals adopt in response to threats from the authority) are used to manage taxation threat from the authority. The two sample groups used were: a group representing normal levels of interaction and regulatory pressure from the tax authority; and one representing conflict between the regulator and regulatees.

The results show that for both groups, three coping sensibilities influence taxpayers' motivational posturing, although all three coping sensibilities are significantly higher in the group in conflict with the tax authority.[54] The results further suggest that the most effective regulatory outcome is achieved when the process can minimise the 'taking control' and 'feeling oppressed' sensibilities, and strengthen the 'thinking morally' sensibility. The findings demonstrate that taxpayers, in addition to other factors, construct motivational posturing when they are confronted with the demands of authority. This is motivated by the need to live comfortably within the life space that is inhabited by themselves and the tax authority. Overall, the results indicate that coping sensibilities (based on how people deal with life events) contribute to the motivational postures taxpayers adopt in relation to managing any threat from the tax authority.

Studies conducted by Hartner et al. (2008) used data from two previous studies to examine the relationship between government, tax authorities and taxpayers, applying procedural justice and identity judgments.[55] Resource judgments were used to evaluate outcomes, while behavioural engagements measured actual tax compliance (or noncompliance). The research

[53] Taxation involves government extracting money from individuals, who are unable to refuse to pay, and therefore taxation is considered to be a threat (Kirchler, 1998).

[54] The three coping sensibilities are: 'thinking morally', 'feeling oppressed' and 'taking control', and they are all based on how people deal with life events.

[55] Data for this study was from the Community, Hopes, Fears, and Actions Survey (Braithwaite, 2001; Braithwaite et al., 2001), and the Australian Tax System – Fair or Not Survey (Braithwaite & Reinhart, 2005).

model was then extended by the addition of motivational postures. The results indicate a clear direct influence of procedural justice on motivational postures, suggesting that when taxpayers perceive fair treatment from the tax authority (who employs procedurally fair decision rules), motivational postures of deference (commitment and capitulation) increase, and motivational postures of defiance (resistance and disengagement) decrease. The results also establish that defiance-oriented motivational postures are associated with tax noncompliance, although there was no indication of the assumed negative influence of deference-oriented motivational postures on tax noncompliance. The authors attribute this unexpected outcome to the possibility that unfavourable attitudes towards taxation may have a stronger effect on behaviour than favourable attitudes.

To sum up, the limited tax compliance literature incorporating motivational postures (or social distance) yields an inconclusive outcome. The findings also indicate that different motivational postures can be held at the same time by taxpayers, and these postures do not represent stable individual characteristics, but rather represent positions that taxpayers can shift between (Taylor, 2003). Consistent with Kirchler's (2007) argument that most taxpayers are compliant, the studies reviewed here provide evidence that the most common posture adopted by taxpayers tends to be commitment, followed by capitulation. The least common postures include resistance and disengagement. Furthermore, the inconclusive outcomes can also be attributed to the argument that these postures are dynamic; that is, taxpayers tend to move between the various postures.

2.9 SUMMARY

This chapter presented a discussion on the three main tax compliance models commonly used in tax compliance research, and reviewed selected literature concerning tax compliance behaviour that is relevant to this study. The three main tax compliance models are: the Economic Deterrence Models; the Social Psychology Models; and the Fiscal Psychology Models. The literature reviewed in this chapter includes studies that relate to: the Theory of Planned Behaviour (TPB); Procedural Justice Theory (PJT); threat of sanctions; societal norms; perception of tax offences; and motivational postures (or social distance).

The Economic Deterrence Models assume that taxpayers' behaviours are motivated by self-interest (Allingham & Sandmo, 1972). The models are based on the assumption that effective threats of detection and punishment for noncompliance will increase compliance behaviour. Taxpayers are assumed to calculate the potential costs and benefits of their tax reporting decisions and, if the potential cost of noncompliance is perceived to be high, compliance will increase (and vice versa). The Social Psychology Models are concerned with

encouraging normative support for compliance without the need to deter with threats of punishment. Taxpayers are assumed to be motivated by their moral and social obligations, and not by any attempts to maximise their economic utility. The threat of social sanctions or sanctions imposed by self is considered to influence their tax reporting decisions. The Fiscal Psychology Models are a combination of the elements of the Economic Deterrence Models and the Social Psychology Models. Despite the development in tax compliance research, there is still no widespread consensus as to the optimal model for tax compliance research.

This chapter also reviewed some relevant studies applying the TPB to predict a range of behaviours. The review included the limited numbers of tax compliance studies that employed the TPB. The majority of studies that examined tax compliance behaviour and behaviours in other domains provide overwhelming support for the use of the TPB in predicting and explaining behaviour. Whilst the use of the TPB in other areas of behavioural research has been well validated, the limited research relating to tax compliance research means that only with increased use of the TPB in tax compliance research will the required level of validation be achieved.

The PJT has received less attention than the widely used Distributive Justice Theory in tax compliance research. Procedural justice plays a key role in enhancing the legitimacy of an authority, which in turn supports the system under review. The majority of studies reviewed provide overwhelming evidence of the important role of procedural justice rules in tax authorities' processes and procedures when administering the tax rules or dealing with disputes. The outcome of a procedurally fair process will usually be accepted by the taxpayer even if the outcome was unfavourable to the taxpayer (Tyler, 2010). Overall, the literature on the PJT in the tax compliance domain is minimal and is still at the early stages of development. As such, the findings have not been sufficiently validated in this area of research.

A large volume of literature is available on both formal and informal sanctions. While it is clear that formal sanctions have a role in taxpayers' compliance behaviour, there is evidence that indicates the increasingly important role of informal sanctions (or tax morale) in tax compliance research. An increasing number of studies have provided evidence that informal sanctions are more effective than formal sanctions in increasing the level of compliance. The overall outcome does not suggest that formal sanctions should be abandoned; rather, it reinforces the fact that an optimal compliance strategy should include deterrence tools based on both formal and informal sanctions.

The majority of prior research indicates that tax evasion is generally not considered to be a serious offence. Respondents in the studies believe that other offences should attract harsher penalties than tax evasion. The results also indicate that respondents consider that the tax authority should be lenient on taxpayers evading smaller amounts of taxes; while some even felt that small scale evasion should not attract any penalties. Most challenging for the tax authorities (especially the New Zealand tax authority) is the number of people who believe that noncompliance has increased over the years in New Zealand.

The Motivational Posturing Theory has not been widely used in tax compliance research, resulting in the availability of very few studies. The review suggests that the commitment posture (reflecting fully compliant taxpayers) is the most common posture adopted by taxpayers, followed by the capitulation posture (these are deference positions). However, results from most of the available studies appear to be inconclusive, and results from the limited literature reviewed indicate that the role of motivational postures in influencing tax compliance behaviour is uncertain.

In summary, the review of selected literature carried out for this study concludes that there are still some gaps of knowledge with respect to understanding taxpayers' compliance behaviour, and as of yet there is still no universal consensus on the optimal compliance theory, research model, research method, or research variables for tax compliance research. The next chapter introduces and presents the discussion on several selected theories that underpin the research models and the research variables.

CHAPTER 3
SELECTED BEHAVIOURAL THEORIES

3.1 INTRODUCTION

Tax compliance research was traditionally based on the economics-of-crime theory; however, due to the limitations in capturing the relevant behavioural aspects of tax compliance behaviour, researchers have experimented with noneconomic models based on behavioural theories. This chapter presents selected behavioural theories applied in prior tax compliance research, and describes the contributions, strengths and weaknesses of the selected theories.

This chapter is organised according to the emphasis of the theories used in the current research. The introduction to this chapter is followed by section 3.2 with a description and discussion on the development of the underlying theory used to develop the research model, that is, the Theory of Planned Behaviour (TPB) and its predecessors. Section 3.3 provides an in-depth analysis of the TPB, including discussions on the theory's contributions, strengths and weaknesses, and its application to tax compliance research. Section 3.4 presents Deterrence Theory, and discusses the theory's contribution towards the development of the first economic model of tax compliance. Procedural Justice Theory (PJT) is introduced in section 3.5, together with an analysis of each of the justice rules that are used to evaluate the fairness of allocative procedures. This is followed by section 3.6, which presents the Motivational Postures Theory (MPT), which refers to the approach individuals take to position themselves in relation to regulatory authorities. Finally, this chapter concludes with a summary of the discussions presented.

3.2 DEVELOPMENT OF THE THEORY OF PLANNED BEHAVIOUR

The most widely researched integrated models of behaviour are the Theories of Reasoned Action (TRA) and Planned Behaviour (TPB). The TPB (Ajzen 1985; 1988) is an extension of the TRA (Fishbein & Ajzen, 1975; and Ajzen & Fishbein, 1980) that includes perceived behavioural control, an additional determinant of behavioural intention and behaviour (in addition to attitudes and subjective norms). The TPB has its genesis in the Expectancy-Value Theory (EVT), which developed into the TRA, and then was extended into the TPB.

The TPB has been applied to a wide range of behaviours, and is one of the best supported social psychological theories in terms of predicting behaviour. The TPB's popularity is based on the amount of variance explained in behavioural intention and behaviour. A review of 185 separate studies applying the TPB model provides evidence that the theory accounted for an

average of 27 percent variance in actual behaviour, and 39 percent in behavioural intentions (Armitage & Conner, 2001). Despite its success in a range of behavioural studies, few attempts were made in the past to use TPB to examine tax compliance behaviour. As such, most of the literature supporting the use of the TPB model tends to be in other areas of behavioural research. The theory also enables the building of an integrated model using multiple factors associated with tax compliance behaviour.

The conceptual model (TRA) developed by Fishbein and Ajzen (1975) was first introduced as the Expectancy Value Theory (EVT). The earlier Expectancy-Value Models were developed in the 1950s by a group of social psychologists at the University of Michigan (Eagly & Chaiken, 1993), although one of the first and most complete statements of the Expectancy-Value Model was by Fishbein (1963) and Fishbein and Ajzen (1975).

3.2.1 Expectancy-Value Theory

EVT provides a framework for understanding the relationship between attitudes and the evaluative meaning of beliefs (Eagly & Chaiken, 1993). Fishbein (1963) introduced the Expectancy-Value Model, which asserts that a person's attitude, as understood in the abstract sense of evaluation, is a function of that person's beliefs. Beliefs are depicted as the sum of the expected values of the attributes ascribed to the attitude object. Expected values comprise both expectancy and a value component. The expectancy component of each attribute's expected value is the belief that a given behaviour will lead to (or will not lead to) a given outcome, whereas the value component is the person's evaluation of the subjective value placed on that outcome (Ajzen & Fishbein, 1980; and Eagly & Chaiken, 1993). When predicting an attitude, the expectancy and value terms associated with each attitude are multiplied, and then added together. Evaluation of an attitude object is therefore a summation of the evaluations associated with the particular attributes that are ascribed to the attitude object. The basic structure of the Expectancy-Value Model, as applied to behaviour, can be algebraically represented in the equation below:

$$Attitude = \Sigma\, Expectancy \times Value$$

The Expectancy-Value Model assumes that an individual is more likely to be motivated to perform a target behaviour that will result in an outcome that is highly valued. Conversely, when an individual does not believe the target behaviour will lead to a specific outcome, or the resulting outcome is not valued, the individual will be less likely to be motivated to perform the target behaviour. Attitudes, together with the beliefs and valuations on which these attitudes are based, are measured directly. Attitude towards behaviour can be measured

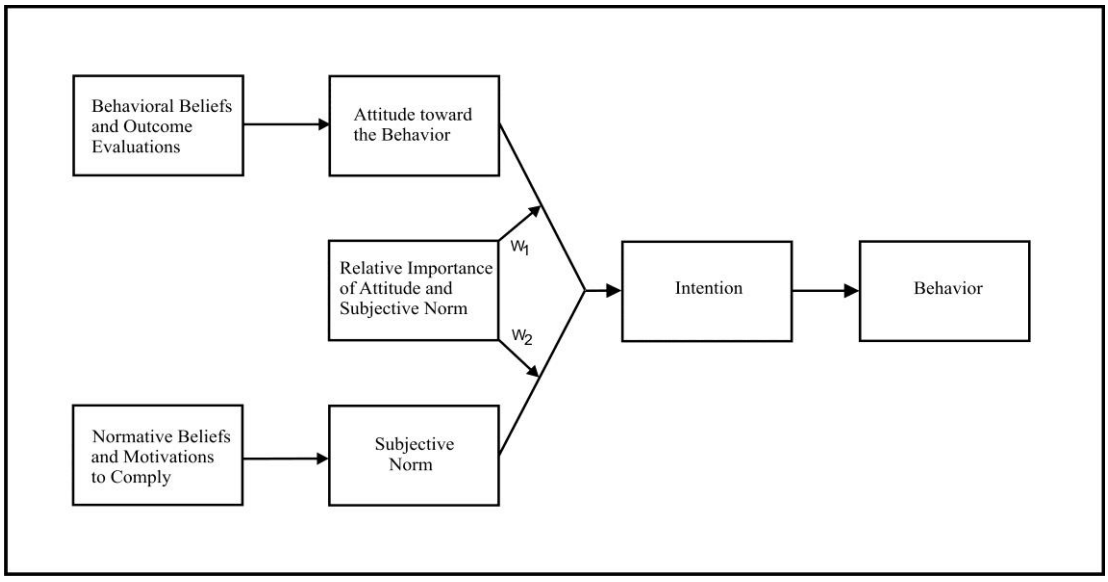
by any standard attitude scaling procedure, such as Likert, Thurstone, or Guttman scaling, or semantic differential (Ajzen & Fishbein, 2008).

3.2.2 Theory of Reasoned Action

Whilst the Expectancy-Value Model is still relevant in behavioural research, much of the recent work with the Expectancy-Value Model was conducted in the context of the TRA (Ajzen & Fishbein, 1980), and its successor, the TPB (Ajzen, 1988; 1991). Based on the large volume of literature, the TRA and the TPB appear to be the two most widely used social psychological models currently used to predict intention and behaviour. The TRA proposes that intentions are the immediate precursors of behaviour, and that intentions, in turn, are a function of attitudes toward the behaviour and the sum of the normative beliefs weighted by motivation to comply. The TRA was developed to provide a better understanding of the relationships between attitudinal beliefs, normative beliefs, intentions and behaviours (Fishbein & Ajzen, 1975). Given that the elements or constructs of the TRA are identical to the TPB, the individual constructs of the current research model will be discussed in detail, under the TPB Model, in the later part of this chapter.

The TRA Model (a term used for the purposes of this study to describe a behavioural model based on the TRA) was developed and designed to predict and explain behaviour in specific contexts, and provides a parsimonious explanation of behaviour (Fishbein & Ajzen, 1975; and Ajzen & Fishbein, 1980). The graphical presentation of the TRA model is displayed in Figure 3.1.

Figure 3.1: Theory of Reasoned Action
(Reproduced from Ajzen and Fishbein, 1980, p.100)



In brief, the TRA Model is based on an individual's intention,[56] or motivation, to engage in the target behaviour. According to the TRA, behavioural intentions are arguably the best predictor of a person's behaviour. The stronger the intention to undertake the target behaviour, the greater the likelihood of engaging successfully in that behaviour. Ajzen and Fishbein (1980, p. 181) added that "intentions are assumed to capture the motivational factors that influence a behaviour; they are indications of how hard people are willing to try, of how much of an effort they are willing to exert in order to perform the behaviour."

Behavioural intention, in turn, is a function of attitudes towards the behaviour and subjective norms. Attitude towards the behaviour reflects an individual's perception of the desirability of performing a target behaviour, which is in turn a function of a cognitive belief structure that comprises two sub-components: salient beliefs that performing the target behaviour will lead to a specific outcome, and the evaluation of that outcome. Subjective norms refer to an individual's perception of whether relevant others think that the individual should or should not perform the behaviour. This perception in turn is a function of a person's perceived expectation that one or more referents think the individual should perform (or should not perform) the target behaviour, and the level of the individual's motivation to comply (Ajzen & Fishbein, 1980). Based on the TRA, if an individual believes that a positive outcome will result from performing a target behaviour, and that important referents would encourage and approve of such a behaviour, then positive intentions would likely result in terms of the target behaviour.

Empirical evidence from prior studies demonstrates the applicability of the TRA in a variety of experimental and naturalistic settings, covering a wide range of behaviours (Beck & Ajzen, 1991). Further, a meta-analytic review of prior research on the TRA concluded that the predictive utility of the TRA was strong across a range of behavioural conditions (Sheppard et al., 1988; Sheeran & Taylor, 1999; and Landridge et al., 2007). Intentions to perform the target behaviour can be predicted from attitudes towards the behaviour and from subjective norms, and the intentions in turn correlate well with observed actions.

The key hypotheses of the TRA are that behavioural decisions involve a reasoned process, in which the behaviour is influenced by attitudes and norms. These factors influence behaviour through their effect on intention. However, despite its wide use, the TRA's predictive ability is only optimal when the behaviour of interest is under complete volitional

[56] For the purpose of this study, 'intent', 'intention' and 'behavioural intention' are used interchangeably, and refer to the same construct.

control of the individual (Ajzen & Fishbein, 1980; and Ajzen, 1988).[57] Intentions and behaviours that are not completely under volitional control are not adequately served by the TRA. Further, the TRA asserts that external variables do not directly influence behaviour, and that they are only related to behavioural intentions and behaviour, through their impact on the behavioural and normative beliefs (Ajzen & Fishbein, 1980). However, subsequent studies have disputed this claim by demonstrating that some external variables are able to influence behaviour directly (Ajzen, 2010).

Recognising that some of the behaviours under study may not be under complete volitional control, Ajzen (1985; 1988) introduced perceived behavioural control (PBC), as an additional construct to predict both intention and behaviour. PBC is defined as the belief of how easy or difficult performing the target behaviour is likely to be (Ajzen, 1985; 1988). The PBC element was added to deal with factors that may serve as opportunities, obstacles or impediments towards achieving the desired outcome. Beliefs about the availability and opportunity to effectively employ the required resources, and having the right skills to engage in the target behaviour, will determine the level of perceived behavioural control. Whilst the TRA was considered adequate for predicting behaviours that were relatively straightforward (that is, under complete volitional control), the TRA Model was found to be inadequate when there were constraints on the proposed actions. This has led to some failures in predicting behaviour, because in situations where resources or ability is lacking, no matter how strong the intention, it will not lead to the target behaviour. Arguably, the PBC construct provides the necessary information about the potential constraints on action as perceived by an individual, and further explains why intentions do not always predict behaviour (Armitage & Conner, 2001).

Comparative research undertaken by Madden et al. (1992) compared the precision in the prediction of intentions and target behaviour of the TRA with the TPB, across ten behaviours. These behaviours were chosen to represent a range of volitional control over the proposed performance of the behaviours. The results demonstrate that the TRA was adequate when the behaviours are under volitional control. However, when the behaviours are not under full volitional control, the TPB was found to be superior to the TRA in the prediction of the target behaviour. Further, Ajzen (1988, p. 127) acknowledged that the TRA "was developed explicitly to deal with purely volitional behaviours." This means that the TRA is only suitable

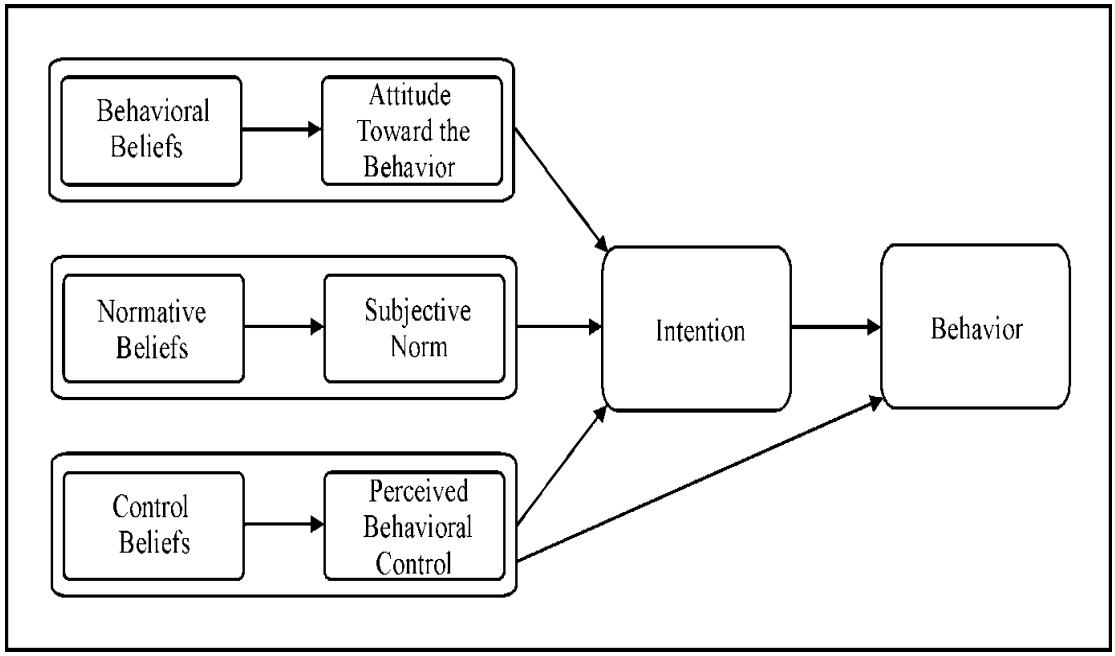
[57] Full volitional control means that the individual has complete freedom to choose whether or not to perform a target behaviour.

when predicting simple behaviours, where success of performing the target behaviour requires only the formation of an intention.

3.3 THEORY OF PLANNED BEHAVIOUR

Ajzen's TPB (1988; 1991) is a well-received social cognition model, which has become the dominant social psychological model for relating attitudes to behaviour (Conner & Sparks, 1996; and Armitage & Conner, 1999). That is, the more a person intends to engage in a target behaviour, the more likely (s)he is to actually engage in that behaviour. Underlying behavioural intentions are attitudes towards the behaviour (beliefs about the consequences of the behaviour), subjective norms (beliefs about the normative expectations of other people), and perceived behavioural control (beliefs about the presence of factors which may facilitate or impede performance of the target behaviour), which determine both behavioural intention and behaviour. The TPB maintains that attitudes, together with subjective norms and perceptions of control, lead to the formation of behavioural intention (Ajzen, 1985; 1991). Behavioural intention enables the prediction of behaviour. Further, in addition to contributing towards the formation of behavioural control, perceived control is also capable of influencing behaviour directly (Ajzen, 1985; 1991). Figure 3.2 illustrates the theoretical relationship between the various elements of the TPB Model (for the purposes of this study the term "TPB Model" describes a behavioural model based on the TPB).

Figure 3.2: The Theory of Planned Behaviour
(Reproduced from Ajzen, 2004, p.1)



The TPB Model depicts each of the determinants of behavioural intention as a function of an individual's salient beliefs. The TPB Model therefore posits that attitude is a function of a person's outcome beliefs; subjective norms are a function of a person's referent beliefs or normative beliefs; and perceived behavioural control is a function of a person's control beliefs. The TPB Model further illustrates that PBC can have a direct effect on behaviour, as well as an indirect effect on behaviour through its effect on behavioural intention.

Prior literature indicates that the TPB has been successfully applied to a variety of situations in predicting the performance of behaviour and intention, such as: predicting the intention to quit smoking and quitting behaviour (Rise et al., 2008); predicting blood donation behaviour (Holdershaw et al., 2011); predicting gambling behaviour (Martin et al., 2010); and predicting the intention to avoid caffeine (Madden et al., 1992). Madden et al. (1992) found that the TPB has a better predictive power than the TRA although both theories are well used in behavioural research. The components of the TPB are presented and discussed in sub-sections 3.3.1 to 3.3.5, followed by the rationale for applying the TPB as the underlying theoretical framework.

3.3.1 Self-Reported Past Behaviour

The TPB suggests that the key factor in determining whether a person will engage in certain behaviour is the intention to perform the target behaviour (Fishbein & Ajzen, 1975). The greater the intention to perform the behaviour, the more likely a person will actually engage in the target behaviour. The ability of the TPB Model to predict behaviour depends on the degree of behavioural intention and the direct effect of PBC (Beck & Ajzen, 1991). Beck and Ajzen (1991) add that past behaviour is considered to be the best predictor of future behaviour. Behaviour is depicted by the TPB Model as a linear regression function of behavioural intention and perceived behavioural control, as expressed in the following equation:

$$B = w_1 BI + w_2 PBC$$

where B is the target behaviour, BI is the behavioural intention, PBC is perceived behavioural control, and w_1 and w_2 are the regression weights (Fishbein & Ajzen, 1975; and Conner & Sparks, 2005).

Past behaviour is widely accepted by some researchers to be a good predictor of later action (Ajzen & Fishbein, 2005 and Ajzen, 2010). This is based on the assumption that, with past repeat performance, behaviour is said to habituate, and it is habit strength that is assumed

to influence later behaviour. Tittle (1980) argues that people develop patterns of responses to various situations over time, which suggests that past behaviour will develop into a pattern of future behaviour. Burnkrant and Page Jr (1988) note that prior research supports the view that past behaviour contributes to the prediction of future behaviour, over and above the effect it has on other variables of the TRA. However, Ajzen (2010) opposes the use of past behaviour (as an independent variable) to predict future behaviour on the basis that it does not meet the criterion of causality. Ajzen (2010) explains that unlike attitude, perceived norm, perceived behavioural control, and intention; frequency of past behaviour cannot readily be used to explain performance of subsequent action. Based on the two line of research on the predictive power of past behaviour the current study will not include past behaviour as an independent variable to predict tax compliance behaviour. Past behaviour will instead be used as a proxy for future behaviour.

3.3.2 Behavioural Intention

The objective of the TPB Model is to predict and understand a person's behaviour (Ajzen & Fishbein, 1980). The influence of attitude, social pressure and PBC on behaviour is mediated through behavioural intention. An individual's behaviour is determined by the individual's intention (behavioural intention) to perform a given behaviour. The intention to perform the behaviour is an immediate antecedent of actual behaviour, and represents a person's motivation or decision to exert the necessary effort to perform the behaviour (Ajzen, 2002a). The TPB suggests that intentions capture the motivational factors that influence a given behaviour (Beck & Ajzen, 1991). Intentions therefore measure how hard people are willing to try, and how much of an effort they would exert to perform the behaviour (Ajzen, 1991), or the self-instructions individuals give themselves to act (Triandis, 1977). Therefore, the stronger a person's intention to engage in a particular behaviour, or to achieve their behavioural goals, the more successful they will be in performing that particular behaviour or achieving the behavioural goal.

The TPB posits that a person's intention is determined by three conceptually independent determinants: a person's attitude towards the behaviour of interest; subjective norms; and PBC. This relationship can be stated algebraically as presented in the equation below:

$$B = BI = w_1 A + w_2 SN + w_3 PBC$$

where *B* is the behaviour of interest, *BI* is the behavioural intent, *A* is attitude towards performing the behaviour, *SN* is the subjective norm, *PBC* is the perceived behavioural

control, w_1, w_2 and w_3 are the relative weights of attitudes, subjective norms and PBC (Fishbein & Ajzen, 1975).

The above equation illustrates that behaviour is a function of an individual's intention to engage in the behaviour of interest, which in turn is a function of: the individual's evaluation of performing the behaviour and its outcome; their perception of how referents would want them to behave and the motivation to conform to referents' expectations; and the perceived control the individual has over the behaviour. Further, the TPB identifies three key factors that can influence the magnitude of the relationship between intention and behaviour: the degree to which intention and behaviour correspond in their levels of generality or specificity; the stability of the intention; and the degree of volitional control available to the individual in undertaking the intended behaviour (Fishbein & Ajzen, 1975; Ajzen & Fishbein, 1980; and Ajzen, 2010). Tests of the TPB Model have confirmed the predictive validity of intentions. A number of meta-analytic reviews in various other areas of social behaviour have provided support to this relationship (Armitage & Conner, 2001).

Warshaw and Davis (1985) distinguish between two measures of intentions: measures of behavioural intentions (measured as the intention to undertake a behaviour); and measures of self-predictions (measured as the likelihood of performing a behaviour). The Warshaw and Davis (1985) study found measures of self-prediction to be a better predictor of behaviour than measures of behavioural intention. However, this seems to apply only when the behaviour is not under volitional control. When predicting volitional behaviour, there is little difference between the two measures in predicting behaviour (Warshaw & Davis, 1985). Sheppard et al.'s (1988) meta-analysis revealed measures of self-prediction to be a better predictor of behaviour, whereas Armitage and Conner's (2001) meta-analysis, which considered the role of intentions, desires, and self-predictions within the framework of the TPB, found intentions and self-predictions to be better predictors of behaviour than desires. Armitage and Conner's (2001) analysis further observed that intentions and PBC have the most explanatory powers. Also, Armitage and Conner (2001) observed that the majority of the studies reviewed tend to use mixed measures of intentions, which include a combination of three measures (intention, self-prediction and/or desire). In most of these studies, all three measures were found to be highly correlated (Conner & Sparks, 2005). Consistent with the outcome of the above analysis, the present study used both measures; that is, measures of intentions and measures of self-predictions together in the research model.

In addition to holding a strong intention, there are other non-motivational factors which may assist or impede the performance of the behaviour. These non-motivational factors,

collectively referred to as 'actual control' over the behaviour, could include lack of opportunities or the lack of the necessary resources or skills required to perform the target behaviour (Ajzen, 1985; and Beck & Ajzen, 1991). Therefore, if a person has a strong intention to engage in the target behaviour, and that person also has the opportunity or necessary skills and resources to perform that behaviour, then that individual should succeed in behaving as intended. The direct path from PBC to behaviour will therefore emerge when there is some agreement between perceptions of control and the person's actual control (Beck & Ajzen, 1991).

Beck and Ajzen (1991) acknowledged that in some situations, an individual may not be fully aware of what resources or skills may be needed to perform certain behaviour. However, the TPB is based on perceived, rather than actual behavioural control; it is this perception that is used to predict future behaviour. Therefore, if a person perceives that performing a target behaviour requires certain expertise and that person also believes that (s)he has that expertise, then that person will attempt the target behaviour. In summary, intention is a measure of a person's subjective probability that the person will engage in the behaviour, although it should be noted that the behaviour may be moderated by the direct effect of PBC.

3.3.3 Attitude Towards the Behaviour

The TPB postulates that attitude towards the behaviour is based on a person's underlying behavioural beliefs, and refers to the degree to which the person has a favourable or unfavourable evaluation of the behaviour of interest (Beck & Ajzen, 1991). The Expectancy-Value Model, introduced in the earlier part of this section, provides a framework for understanding the relationship between the attitude a person holds and that person's underlying behavioural beliefs. The outcome expectancy is the belief that performing a certain behaviour will result in a certain outcome. The outcome value is the subjective value placed by an individual on that outcome. This suggests that an individual will be more motivated to perform a certain behaviour, when the individual perceives that behaviour to result in a positive or favourable outcome that is highly valued by the individual (Armitage & Christian, 2004). Therefore, it is apparent that only those outcomes that are valued are likely to impact on individuals' attitudes.

Attitude towards behaviour is a function of the product of an individual's salient beliefs, which represent perceived outcomes or other attributes of the behaviour (Conner & Sparks, 2005). Based on the expectancy-value conceptualisation, outcomes are composed of the multiplicative combination of the perceived likelihood that performance of the behaviour will lead to a particular outcome, and the evaluation of that outcome. These expectancy-value

components are subsequently summed over the various salient outcomes, which is algebraically displayed in the equation below:

$$A = \sum_{i=1}^{i=p} b_i \,.\, e_i$$

where *A* refers to the attitude towards the target behaviour, b_i is the behavioural belief associated with performing the target behaviour which leads to some consequence *i* (thus b_i is the subjective probability that the behaviour has the consequence *i)*, e_i is the evaluation of consequence *i,* and *p* is the number of salient *t* consequences over which these values are summed (Fishbein & Ajzen, 1975; Conner & Sparks, 2005; and Ajzen, 2012).

Conner and Sparks (2005) note that no assumptions are made that an individual performs the above calculation when faced with a decision about performing the target behaviour. Rather, the individuals are more likely to store the results of such considerations in their memory, which is then retrieved when required (Eagly & Chaiken, 1993). Ajzen (2012) notes that the assumption that attitudes are based on information accessible in memory suggests a degree of reasonableness. Whilst the Expectancy-Value Model considers beliefs to be quite accurate, the TPB Model also acknowledges that beliefs can be biased by a number of cognitive and motivational processes, and may be based on invalid or selective information, be self-serving or otherwise fail to reflect reality (Ajzen, 2012). Nonetheless, a set of beliefs once formed is accessible and offers the cognitive foundation from which attitudes are assumed to follow automatically in a reasonable fashion.

Individuals are considered to hold a sizeable number of beliefs about a particular behaviour or object; however, only a small subset is likely to be salient at any one time (Fishbein, 1967a; 1967b; and Ajzen, 2012). Therefore, despite possessing a large number of beliefs, it is mainly the salient beliefs that are considered to influence attitude. This leads to the issue of measuring salient beliefs. The TPB prescribes the use of individually generated salient beliefs, which involves asking respondents to describe the attitude object using a free-response format (Fishbein & Ajzen, 2010). Conner and Sparks (2005) discovered that most studies tend to use modal salient beliefs based on pilot work, following the procedures outlined by Ajzen and Fishbein (1980). Studies examining the effect of individually generated and modal beliefs found a moderately strong correlation between modal behavioural beliefs and attitudes, compared to only a marginally significant correlation between individually

generated beliefs and attitudes (Rutter & Bunce, 1989; and Agnew, 1998; cited in Conner & Sparks, 2005). Whilst the use of individually generated beliefs is consistent with the TPB, the results suggest that its use does not appear to reduce measurement errors sufficiently in order to increase predictability of the behavioural model. Conner and Sparks (2005) conclude that the outcome of the study suggests that the extra effort used for the additional data collection required when using individually generated beliefs (as opposed to modal beliefs) is therefore not justified.

In terms of the current research, prior literature and related compliance theories were used to develop beliefs underlying attitudes towards tax compliance, instead of the recommended pre-testing prescribed by the TPB to elicit salient beliefs.[58] The author considers that modal beliefs are not too dissimilar to beliefs identified in the prior literature (which are also grounded in theory). Further, a number of tax compliance studies based on the TPB demonstrated the successful use of beliefs based on prior literature and theory (Hanno & Violette, 1996; Trivedi et al., 2005; and Saad, 2009; 2011).

Another issue commonly raised, concerns the merits of using measures of instrumental (or cognitive) and affective (or experiential) attitudes. Ajzen (2002b) suggests the inclusion of both instrumental (for example, beneficial/harmful) and affective (for example, enjoyable/unenjoyable) attitude measures. However, in their earlier work, Ajzen and Fishbein (1980, p.55) maintain that attitudes may also be assessed by direct measures of attitudes (for example, by simply asking the respondent more direct questions about their attitudes). Lewis (1982) argues that the distinction between cognitive and affective attitudes are negligible, and maintains that the distinction between the two types of attitude "are even more blurred than those between tax evasion and tax avoidance." Lewis (1982) further adds that the two terms need to be considered only as useful descriptive items, and not considered as hard and fast elements, although both terms need to be covered in comprehensive assessments of tax attitudes. This approach was also favoured by Zanna and Remple (1988, quoted in Conner and Sparks, 2005), for measuring attitudes. In their study, participants were provided with an opportunity to express their general evaluation of a particular behaviour without the researchers prejudging what the bases (for example, cognitive or affective) of that attitude might be.

[58] Most tax compliance studies using the TPB developed beliefs based on prior literature or beliefs grounded in relevant compliance theories (Hanno and Violette, 1996; Trivedi et al., 2005; and Saad, 2009; 2011), while only one study used the prescribed elicitation process to determine the outcome beliefs that underlie taxpayers' attitudes (Bobek & Hatfield, 2003).

Ajzen (2001) considered the merits of using two distinct constructs, or whether these two constructs should be aggregated. Ajzen (2001, p.35) concludes that "individuals differ in their reliance on cognition versus affect as determinants of attitude, and that the two components also take on different degrees of importance for different attitude objects." Based on the above discussion, the distinction between the two measures of intentions was ignored, and both affective and cognitive attitude measures were included in the behavioural intention construct in the current research model.

3.3.4 Subjective Norms (Perceived Social Pressure)

Subjective norms refer to the perceived social pressure to perform or not to perform the behaviour of interest (Ajzen & Fishbein, 1980; and Beck & Ajzen, 1991). Subjective norm is defined as an individual's perception of whether important referents would expect the individual to perform or not perform the behaviour of interest, and the extent to which the individual is motivated to conform to the important referents' expectation, in respect of that behaviour (Ajzen & Fishbein, 1980).

Normative beliefs refer to the perceived behavioural expectations of important referents. Salient normative beliefs underpin subjective norms, which comprise two components: referents' beliefs and motivation to comply. Referents' beliefs refer to an individual's perception of the social pressure to conform to the expectations of important referents (Ajzen & Fishbein, 1980). Some commonly identified referents include: spouses or partners; family members; close friends; and depending on the behaviour under study, these may include business associates, peers, and tax agents. The normative beliefs, in respect of the important referents, may result in an overall perceived social pressure or subjective norms (Ajzen, 2012). Motivation to comply refers to an individual's determination or willingness to comply with the specific wishes or expectations of an important referent. The TPB assumes that the individual will be willing to engage in the target behaviour, to the extent that the individual believes an important referent thinks they should engage in the target behaviour (Ajzen & Fishbein, 1980).

Subjective norm is a function of two factors, an individual's normative beliefs, and the individual's motivation to comply with specific referents' expectations. Consistent with the EVT, each measure of normative belief is multiplied by a person's motivation to comply. This is on the basis that an individual will experience social pressures to behave in a certain way from particular referents, but only if the individual is motivated to comply with those particular referent(s). The subjective norm is expressed algebraically, as set out in the following equation:

$$SN = \sum_{j=1}^{j=q} nb_j . mc_j$$

where *SN* is the subjective norm in relation to a target behaviour, nb_j is the normative belief (that is a subjective probability) that some referent *j* thinks one should perform the behaviour, mc_j is the motivation to comply with referent *j*, and *q* is the number of salient referents (Fishbein & Ajzen, 1975; and Conner & Sparks, 2005).

Subjective norms capture the perceived opinions of important referents. Individuals who are highly concerned that important referents will disapprove of them might be more influenced by subjective norms than those who are less concerned with what others think of them.

A number of tests applied to examine the predictive power of the TRA frequently found that subjective norms contribute less to the prediction of intention than attitude. This outcome suggests that most behaviour are under greater attitudinal control than social influence (Ajzen & Fishbein, 1980; and Ajzen, 1991). A study undertaken by Trafimow and Finlay (1996) found that behaviour, as well as people, can be under attitudinal and/or normative control. Trafimow and Finlay's (1996) results also found attitudes to be more important predictors of intentions across 29 of the 30 behaviours examined for the study. For the attitudinally controlled group, the results reveal that subjective norms had little independent effect on intentions to perform most of the behaviours. Similarly, for the normatively controlled group, the degree to which intention was attributable to attitude was much smaller than it was for the attitudinally controlled group. Their results suggest that attitudes and subjective norms exert varying influence on behavioural intentions depending on the behaviour in question, and whether the sample group is made up of predominantly attitudinally controlled or normatively controlled individuals.

Another reason frequently provided for the consistently weak explanatory power of subjective norms is that this component does not adequately measure normative pressure. Evidence suggests that the narrow conceptualisation of the normative measures may be responsible for this (Sheeran & Orbell, 1999; and Armitage & Conner, 2001). Fishbein and Ajzen (1975) maintain that subjective norms are intended to measure the influence of the social environment, while Turner, (1991, p.1) defined *social influence* as "the process whereby people directly or indirectly influence the thoughts, feelings, and actions of others." It is therefore important to distinguish between social influence, injunctive norms (that is,

what important referents think the individual ought to do), and descriptive norms (what important referents themselves do), because these are considered to be separate sources of motivation (Deutsch & Gerard, 1955). The subjective norm components are considered to be an injunctive social norm because they are concerned with perceived social pressure (that is, the personal potential to gain approval or suffer sanctions from significant others for engaging, or not engaging in the target behaviour). Descriptive norms refer to perceptions of significant others' 'own attitude' and behaviour in the domain. Individuals use the options and actions of important referents to decide what to do themselves (Cialdini et al., 1991; and Ajzen, 2012).

Donald and Cooper (2001) argue that the definition of *social influence* appears to suggest the existence of two social processes that influence behaviour or intention: the overt approval of others, and the less direct normative influences. Donald and Cooper (2001) add that the TPB's social components seem to be operationalised much narrower than suggested by the definition, being expressed in terms of the perceived behavioural expectations of important others.

In an attempt to widen the operationalisation of the social influence, a number of researchers have suggested the inclusion of perceptions of significant others' behaviour, or behavioural norms, in the model (for example, Ajzen & Fishbein, 1980). This suggests that an individual's observation of an important referent performing the target behaviour is a more powerful influence on his or her intentions to behave in a similar manner, compared to behaving based on the perceived expectations of important referents. The importance of using behavioural norms to measure the normative component is reflected in a number of studies (Donald & Cooper, 2001). The subjective norm construct used for this study includes a measure which captures an individual's observation of the behaviour of important referents.

Ajzen and Fishbein (1980) proposed that the important referents should be elicited by asking the participant to identify individuals and/or groups whom they think would approve or disapprove of them performing the target behaviour. However, this procedure was criticised on the basis that it will lead to the inclusion of a number of referents whose views are irrelevant to the target behaviour (Donald & Cooper, 2001). It is therefore important to identify and select referents that are relevant to the behaviour under examination. Subjective norms, for the purposes of this study, will be based on the expectations and behaviour of respondents' most important referent(s).

3.3.5 Perceived Behavioural Control

PBC is an extension of the TRA, and is the third determinant of intention in the TPB (Fishbein & Ajzen, 1975). PBC was added to explain behaviours that are not under full volitional control, and refers to the perceived ease or difficulty involved in performing the behaviour of interest (Ajzen & Madden, 1986; Ajzen, 1991; and Beck & Ajzen, 1991). Behavioural intention is also guided by beliefs about the presence of factors which may facilitate or impede performance of the behaviour. PBC is considered to influence behaviour both directly and through behavioural intentions, and includes all anticipated impediments and obstacles with respect to performing the behaviour of interest. This may include the availability of resources, skills, confidence and the ease or difficulty of performing or refraining from the behaviour and anticipated obstacles.

The TPB assumes that the control component will predict behavioural intention, and in situations where the amount of actual control an individual has over the behaviour can be correctly predicted, it will also predict behaviour directly. The path from PBC to behavioural intention reflects the motivational influence of control on the target behaviour, through intentions (Madden et al., 1992). The direct path between PBC and behaviour reflects the actual control a person has over performing the target behaviour (Madden et al., 1992). If people perceive that they have limited control over the behaviour of interest, then their intention to perform that behaviour may be low, even if attitude towards the behaviour and subjective norms are favourable. This suggests that if attitudes and normative influences are strong, PBC may be less useful in predicting intentions (Ajzen, 1991). Ajzen (1991) further adds that the magnitude of the relationship between PBC and behavioural intention is dependent upon the type of behaviour and the nature of the situation. Generally, if individuals believe that the target behaviour is achievable, they are more likely to attempt to engage in that behaviour.

Individuals who believe that they have the necessary skills and resources, and the necessary opportunities (or lack of obstacles) to perform the behaviour, will perceive a high degree of behavioural control (Ajzen, 1991). Ajzen (1991) explains that each control variable is weighted by its perceived power to facilitate or impede performance of the behaviour of interest. The TPB computes these beliefs by multiplying the frequency or likelihood of occurrence of the factors by the subjective perception of the power of the factor to facilitate or inhibit the performance of the behaviour (Conner & Sparks, 2005). PBC is algebraically expressed as presented in the following equation:

$$PBC = \sum_{k=1}^{k=r} c_k \,.\, p_k$$

where *PBC* is the perceived behavioural control, c_k is the perceived frequency or likelihood of occurrence of factors *k*, p_k is the perceived facilitating or inhibiting power of the factor *k*, and *r* is the number of control factors.

Numerous studies have provided evidence that this additional component has the added power to predict behavioural intention and behaviour (Ajzen, 1991; and Armitage & Conner, 2001). However, concerns have been raised regarding the conceptualisations of the control variables. Critics argue that the concepts of self-efficacy and perceived control should be clearly defined (Giles et al., 2004). This is on the basis that assumptions cannot be made that an individual's perceptions of the extent to which the target behaviour may be compromised by external factors will necessarily reflect their judgments as to how easy that behaviour would be to perform (Terry & O'Leary, 1995). For example, an individual may consider there to be few barriers to performing the target behaviour, and may therefore consider the behaviour to be under the individual's control. At the same time, the individual may also believe that the target behaviour is difficult to carry out (Manstead & Van Eeklen, 1998; and Armitage & Conner, 1999a).

The existing literature does not provide any clear guidelines in terms of which is the preferred measure of control. Nonetheless, evidence is accumulating to indicate that self-efficacy is not only an important addition to the TPB, but it also frequently emerges as the most significant predictor of both intentions and behaviour (Armitage & Conner, 2001a).

Most researchers consider perceived behavioural control and self-efficacy to be conceptually similar or equivalent, whereas others have highlighted the subtle differences between the two (Sheeran et al., 2001). While both constructs refer to individuals' evaluation of their ability in the performance of a particular behaviour, one measure is based on the perceived difficulty of performing the behaviour, whereas the other is based on the perceived confidence in performing the behaviour. PBC is commonly measured in terms of the perceived difficulty or ease of performing that particular behaviour. In contrast, self-efficacy is frequently measured in terms of an individual's confidence in their ability to perform the behaviour (Garcia & Mann, 2003). Consistent with most studies, the current research model is based on the PBC measures and not on self-efficacy measures

Several meta-analytical reviews of the TPB demonstrated the significant contribution made by the PBC construct towards the prediction of behavioural intention and behaviour

(see Ajzen, 1991; and Armitage & Conner, 2001). Armitage and Conner's (2001) review, which included 185 studies, found that the TPB accounted for 27 percent of the variance in subsequent behaviour, and 39 percent of the variance in behavioural intention. The review also found that PBC added significantly to the prediction of intention and behaviour, even after controlling for the effects of attitude or subjective norms (which are components of the TRA).

3.3.6 Rationale for Applying the Theory of Planned Behaviour

In summary, the TPB accounts for a significant proportion of the variance in intention and behaviour. The TPB is also arguably one of the dominant models of attitude-behaviour relations (Armitage & Christian, 2004). In terms of tax compliance behaviour, the TPB can be used with confidence to predict tax compliance behaviour; from taxpayers' behavioural beliefs, normative beliefs and perceived control of performing the target behaviour (complying or not complying with the taxpayers' tax obligations). Specifically, if a taxpayer holds a positive attitude towards complying with the tax rules, positive expectations from important referents that the individual should comply, and if the individual perceives having full control of performing the intended behaviour, then it is more likely that the taxpayer will comply fully with his or her tax obligations. Conversely, if a taxpayer expects the outcome of complying with the tax rules to be unfavourable or negative, and believes that the social pressures from important referents is for the individual to not comply, and if there are no perceived barriers to noncompliance, then noncompliant behaviour is likely to occur.

In terms of control over tax compliance behaviour, whilst the New Zealand income tax system is based on voluntary compliance, most taxpayers may not have any real choice with regard to their tax obligations. The majority of taxpayers, who are salary and wage earners, and those who derive income from sources subject to third party reporting (with income generally deducted at source), have limited choices when making tax reporting decisions. Further, the tax compliance activities of individuals are usually private and not known to important referents. As such, whilst the perceived social pressure to comply (or not comply) with the referents' expectations may be present, important referents may not have the knowledge to impose any social sanctions on the individual taxpayer for not conforming to their expectations. Nonetheless, a large body of literature has provided overwhelming evidence that the TPB is suitable for application to most behavioural research, and the theory should therefore benefit tax compliance research. Further, to date far too few studies have applied the TPB to examine tax compliance behaviour; therefore, the use of the TPB as the underlying framework for the current research model is justified.

While the main elements of the TPB are generally accepted, on many occasions suggestions were made that a research model based on the TPB would benefit by the inclusion of more constructs in order to improve its explanatory quality (Lutz, 2011). Ajzen (1991) supports research that addresses the role of additional variables in TPB models. Prior studies have demonstrated that the addition of other constructs will enhance the prediction of intention and behaviour (Manstead & Parker, 1995; Sheeran & Orbell, 1999; and Bobek & Hatfield, 2003). This is another reason for using the TPB in the current study, given that other compliance variables identified by prior research can be successfully added to the research model.

3.4 DETERRENCE THEORY

Deterrence Theory has been widely applied as the theoretical framework in tax compliance research (Andreoni et al., 1998; Slemrod et al., 2001; Devos, 2004; Schauer & Bajor, 2007; and Nussim & Tabbach, 2009). Deterrence Theory posits that taxpayers make tax paying decisions after weighing up the positives and negatives of noncompliance, which are based on the probability of detection and the severity of punishment. Deterrence Theory highlights the certainty of detection, certainty of being punished, and the severity of the punishment imposed for noncompliance with the laws or for criminal or unlawful activities. Deterrence Theory combines two research approaches: the economic approach; and the sociological approach. The link between Deterrence Theory and the economic model of rational choice is well known (Becker, 1968), whereas its link to sociological concerns is less apparent (Parsons, 1951).

Over the years the separation of factors into economic deterrence and fiscal psychology categories in tax compliance research has become less distinct (Milliron & Toy, 1988), and has now become a matter of degree of emphasis rather than an absolute dichotomy. For example, some research may include variables such as tax rates and tax complexity in the Economic Deterrence Models, whereas some studies adopting the Fiscal Psychology Models have included audits and penalties. Nevertheless, there is still a distinction when it comes to the approach adopted in encouraging compliance. The Economic Deterrence Models focus on legal sanctions imposed by the tax authority to improve compliance, whereas, the Fiscal Psychology Models tend to emphasise taxpayer attitudes and beliefs. However, despite these differences most models have their genesis in the early deterrence model developed by Becker (1968).

Deterrence Theory is grounded in the utilitarian paradigm and is influenced by the Utility Theory in economics, and Exchange Theory in sociology (Grasmick & Green, 1980).

Consistent with economists' views of criminal activities, the approach used by Deterrence Theory is to view crime as a rational act undertaken by individuals who first evaluate the expected utility of both criminal and non-criminal opportunities, before choosing the alternative with the highest utility (Reckers et al., 1994).

The criminal deterrence literature posits that the cost of punishment depends on the combination of three elements: the probability of arrest; the probability of conviction; and the severity of punishment (Mendes, 2004). This follows that authorities will be able to reduce crime by either increasing the probability of arrest, and/or conviction of those arrested, and the severity of the punishment through extended prison terms. The theoretical logic is that the deterrent effects are achieved by setting the cost of committing a crime high enough to dissuade criminal or unlawful activities.

Becker (1968) was credited for using Deterrence Theory to determine optimal levels of law enforcement, and provide an important insight into the analysis of the criminal behaviour of individuals. Analysing individual's responses to individual elements of deterrence increases the knowledge of how or whether certainty of punishment or severity of punishment influences the individual's decision to engage in criminal or unlawful activities. Becker (1968) contends that the deterrent tools for use against unlawful activities (the probability of detection and the resulting punishments) are all within the control of the authorities. Becker (1968) adds that crimes will be committed if the expected utility of committing the crime exceeds the utility derived from allocating the person's energies elsewhere. This suggests that enforcement can become uneconomical at a point in time, at which stage the social loss of the criminal activity becomes apparent.

Becker's (1968) formalisation of Deterrence Theory has withstood the test of time (Mendes & McDonald, 2001), with the principal component of Becker's (1968) theory being based on the certainty and severity of punishment (Becker, 1968). Becker's Model,[59] algebraically illustrated in the equation below, states that the number of offences O is a function of the average probability of being convicted (p), average punishment (f), and a set of average socioeconomic forces (u):

$$O = O(p, f, u)$$

The first two elements, p and f, are the key components of Deterrence Theory (that is, certainty of punishment and the severity of punishment). The formula suggests that when individuals face a choice of whether or not to commit a crime, they will opt to commit the

[59] Reproduced from Mendes and McDonald (2001, p.590).

crime if the expected gain exceeds the expected cost. However, if either the certainty or severity of punishment is increased, while the other is held constant at a non-zero value, the expected utility associated with the crime will decrease (Mendes & McDonald, 2001). Becker's Model appears to ignore the potential offenders' attitude towards risk, given that any perceived gains or losses associated with the unlawful behaviour will depend on whether the behaviour was punished or not.

Criminologists maintain that effective communication to establish the credibility of punishment threats for illegal behaviour is needed to deter criminal or unlawful behaviours. The perception of getting caught (sanction fear) depends on how this message is conveyed to individuals. The deterrence literature differentiates threats that are conveyed through the media, from those communicated through personal communications. Reliance on the media tends to enhance the credibility of the threat of punishment because of the likelihood of overestimating the risk of getting caught. Conversely, reliance on personal communication or word-of-mouth weakens the credibility of the threat of deterrence because this form of communication tends to provide the individual with more accurate assessment about the risk of being caught and punished (Zimring & Hawkins, 1973; and Geerken & Gove, 1975).[60] Geerken and Gove (1975) consider the success of any deterrence process to be determined by the degree to which the deterrence message is successfully conveyed to potential noncompliers. Threats of certain and severe legal punishment would not be a deterrent against deviant behaviour, unless individuals perceive the threat of punishment to be certain and severe.

Since the introduction of Becker's (1968) Model, researchers and scholars have debated the differential effects of each of the elements of deterrence on the expected cost of punishment (Mendes, 2004). A number of empirical studies examining the effects of different components of the Deterrence Theory produced ambiguous results (Mendes & McDonald, 2001). On the one hand, some researchers argue that severity of punishment has an inconsequential effect on the cost of punishment (for example, Decker & Kohfeld, 1990; Eide, 1994; Richardson & Sawyer, 2001; and Devos, 2007). In contrast, a number of researchers consider severity to be relatively less important than certainty of punishment (Becker,1968; and Ehrlich, 1973); while others consider all three elements to be equally important (Gibbs, 1968; Tittle, 1969; Grasmick & Bryjak, 1980; and Mendes & McDonald, 2001). More recent literature supports the certainty of punishment over the severity of

[60] Zimring and Hawkins (1973) distinguished four aspects of criminal deterrence: beliefs regarding the operation of deterrence; ethical or moral consideration regarding the use of criminal sanctions for deterrent purposes, the economic implications of official deterrence policy, and the political aspect of the use of deterrents in crime control policies.

punishment, as a deterrent measure for reducing criminal or unlawful behaviour (von Hirsch et al., 1999), or at the least, that certainly of punishment is likely to be as effective as the severity of punishment (Devos, 2007). Mendes (2004) algebraically and empirically explored the statistical formulations of Economic Deterrence Models, and provided support for the view that all three elements are equally important. Although Becker (1968) introduced risk into the Deterrence Theory, Mendes (2004) questions the relevance of risk in influencing behaviour.[61] Mendes (2004) demonstrated that potential criminals mentally combine the three deterrence elements, irrespective of whether they are risk neutral, averse, or acceptant, and therefore considers that the risk component is not relevant to the Economic Deterrence Models.

In a tax context, this suggests that the probability of detection, the certainty of the punishment and the severity of punishment, are equally important in a tax compliance model based on Deterrence Theory. Deterrence Theory posits that individuals behave rationally and will choose among competing lawful and unlawful alternatives in order to achieve maximum utility of their choices, subject to various constraints. Unlawful or criminal behaviour can be considered to be risky. Taxpayers will make choices as to how much of their income to report and how much to suppress, and will make their decisions based on the perceived probability of the underreporting being detected, the perceived certainty of being punished for the underreporting, and the certainty and severity of the penalties imposed (Allingham & Sandmo, 1972).

The sociological approach of Deterrence Theory posits three inhibitory elements of social control which controls norm violations: fear of legal punishment, which is imposed by the state; fear of social disapproval, which is imposed by peers; and the influence of moral conscience, which is imposed by the individual (Grasmick & Green, 1980; Violette, 1989; Kaplan et al., 1997; and Bobek & Hatfield, 2003).[62] The emphasis is on individuals' perceptions of the perceived certainty and severity of sanctions (legal and non-legal), rather than the actual certainty and severity of sanctions.

3.4.1 Fear of Legal Punishment (Imposed by the State)

The key element in Deterrence Theory is the threat of legal sanctions, which refers to the threat of one form of physical and material deprivation (Grasmick & Green, 1980). Gibbs

[61] Becker (1968) contends that the certainty and severity of punishment is conditional upon criminals' attitudes towards risk.

[62] Fear of social disapproval and moral conscience are also referred to as informal sanctions, extralegal sanctions or non-legal sanctions.

(1979) contends that the certainty, severity, and celerity of legal punishment have a direct influence on taxpayers' perceptions of punishment.[63] These perceptions (of punishment) in turn activate the operation of deterrence, which constrains unlawful or criminal activities. Within this framework, deterrence operates through the fear of punishment, which is stimulated by the perceived threat of legal punishment by the authorities. The decision-making process leading to the decision not to commit a crime is in fact not observable because it relates to activities not undertaken (Geerken & Gove, 1975). The specific deterrence mechanism is the threat of detection, apprehension and punishment for unlawful or criminal behaviours. Deterrence thus occurs when a threat prevents an individual from committing the threatened behaviour (Zimring & Hawkins, 1973).

Among the three elements of control, the use of legal punishment for engaging in unlawful or criminal behaviour, in the form of fines or imprisonment, is the easiest and most common form of control by authorities. Penalties or legal sanctions are effective if the threat of the penalty changes behaviour, or if the expected cost of the penalty exceeds the expected benefits of undesirable behaviour. Further, the threat of legal punishment would be more effective in deterring unlawful or criminal behaviours, if the potential offender is likely to be stigmatised as a result of being legally punished for violating the law (Grasmick & Appleton, 1977). This suggests that formal punishment may not be the real source of deterrence against criminal or unlawful behaviour. Instead, it is the threat of being exposed as an offender to his or her peers and the resulting stigmatisation from his or her peers that actually serves as a deterrent of legal punishment. This also suggests that to be effective, any legal punishments imposed must be visible to others.

Grasmick and Bryjak (1980) demonstrate that measuring perceived severity using respondents' subjective personal cost of the penalty expected by them (as opposed to using a particular amount of penalty) is a better predictor of deviant behaviour than previous measures of perceived severity using a specific amount of penalty. This is because a given amount of penalty may be considered severe and costly by some individuals, thereby acting as a deterrent against deviant behaviour. Conversely, others may regard that particular amount of penalty as insignificant, and therefore the penalties imposed may not be considered severe enough to act as a deterrent against deviant behaviour.

Although a majority of studies on deterrence include some measures of moral commitment or threat of social disapproval, in certain situations where the deviant motivation is high,

[63] Celerity refers to "the promptness with which punishment is administered following the offense" (Howe & Brandau, 1988, p.797).

individuals may be willing to incur the cost of 'feelings of guilt', in order to continue to engage in the deviant behaviour (Grasmick & Green, 1980). In such situations, legal punishment will have a strong deterrent effect regardless of the level of moral commitments.

3.4.2 Fear of Social Disapproval (Imposed by Peers)

The fear of social disapproval, from engaging in an unlawful or criminal activity, is also considered to be a deterrent. The key objective of the threat of social disapproval is the implicit threat that, through legal sanctions, the individual would be exposed as an offender to important others. The important referents would, in turn, impose informal sanctions for undertaking the deviant behaviour (Grasmick & Scott, 1982). This suggests that the threat of legal sanctions will deter individuals from engaging in deviant behaviour only if the punishment is followed by a threat of social disapproval. However, if there is a lack of normative consensus, legal sanctions may have a greater deterrent effect on unlawful or criminal activities than the threat of social disapproval. Wrong (1961) argues that individuals are not only motivated by personal gains and costs, but are equally motivated by approval and disapproval from their peers. The deterrent effect from the perceived threat of social disapproval lies in individuals' anticipation of negative evaluations by important others, if they engage in unlawful or criminal behaviour. Wrong (1961) argues that the theoretical acceptance of the threat of social disapproval control is based on the assumption that individuals are motivated by a desire to achieve a positive image of self by gaining acceptance or status in the eyes of others.

An important aspect of social approval or disapproval is whether the important referents (whose approval is desired) are themselves involved in unlawful or criminal behaviour (Grasmick& Green, 1980). It follows that, if an individual socialises with others who do not violate the law, the social disapproval would be high if the individual violates the law. Conversely, if important others engage in unlawful or criminal activities, the threat of non-legal sanctions (by way of social disapproval) is low or inconsequential. A number of studies found a relatively strong positive zero-order relationship between important referents' involvement in unlawful or illegal activities, and respondents' involvement in such activities (Grasmick & Green, 1980; Cialdini et al., 1991; and Ajzen, 2012). Conversely, these studies also suggest the existence of a strong inverse zero-order link between the threat of social disapproval and unlawful and criminal behaviour.

Blake and Davis (1964) are critical of researchers who focus too heavily on the need for social approval in explaining deviant behaviour. Although social approval is enjoyable and necessary, it is also "frequently simply instrumental to other competing ends and interests,

which limit how much an individual, can invest in approval" (Blake & Davis, 1964, p. 479). Instead, it is more realistic to assume that an individual would wish to optimise his or her satisfaction, including resistance to social opinions. Blake and Davis (1964) conclude that although there is widespread sensitivity to social opinions, it may not reflect a need for social approval, rather, it may be interpreted as sensitivity to hints of possibly more severe consequences.

The above argument implies that the perceived threat from legal sanctions, together with the threat of social disapproval, have an inhibitory effect on unlawful behaviour. Further, the threat of legal punishment is not dependent upon the level of threat of informal sanctions, rather, both types of sanctions are considered to be equally effective in deterring unlawful activities.

3.4 3 Influence of Moral Conscience (Imposed by Self)

An individual's personal moral conscience, or moral commitment to obeying the law, is an important motivator to obeying the law. However, traditional economic models, based on utility maximisation, have ignored the ethical or moral dimensions of economic decision making. These models have ignored behaviours, such as when individuals forego opportunities for unlawful or criminal gains, even when the expected penalties are negligible. The economic model of crime tends to simply regard this as anomalous behaviour that cannot be easily explained (Eisenhauer, 2006).

Eisenhauer (2006) examined the role of conscience in deterring unethical behaviour, and concluded that those individuals who anticipate remorse over wrongdoing will consider this in their economic choices. Empirical evidence from transitional economies indicates that moral sentiments are not only effective deterrents, but also have a significant influence on economic outcomes by discouraging tax evasion.[64] Results suggest that individuals' consciences could deter unethical conduct in a wider variety of economic contexts in which opportunities exist for illicit gain, including tax evasion.

Grasmick and Scott (1982) argue that moral commitment forms part of sanctions, and they view feelings of guilt as a form of self-sanctioning. Grasmick and Scott (1982) also found the effect of moral commitment on intended tax cheating to be much stronger than the effects for legal sanctions. In contrast, evidence provided by Tittle and Rowe (1973) suggests that attempts to increase the level of moral obligation towards tax compliance, by increasing

[64] There is no evidence to suggest that the outcome of the research is unique to transitional economies, rather, the outcome should equally apply to other countries (Eisenhauer, 2006).

feelings of guilt, may have the opposite effect. This is on the basis that any attempts to increase individuals' moral commitment may signal to them that tax evasion is widespread, resulting in the norm against noncompliance losing its moral appeal.

A number of scholars have argued that morally committed individuals cannot be deterred by any form of sanctions, because these individuals never contemplated violating any norms of laws (Kinsey, 1986). Grasmick and Green (1980) consider moral commitment or internalisation to be such a powerful inhibitor that it precludes the possibility of an individual being motivated to deviate, even if the perceived threats of legal punishment are unlikely to occur or are minimal. This line of argument suggests that the degree of the effect of perceived threat of legal sanction is reliant upon the levels of moral commitment of the individual.

In summary, literature based on the sociological theory of deterrence indicates that the three independent mechanisms of control outlined previously make an independent and significant contribution in deterring individuals from engaging in unlawful or criminal behaviour. And in a tax context, the three mechanisms of control include: the threat of penalties imposed on any tax shortfall detected; the threat of social disapproval from peers whose norms would be to fully comply with their tax obligations; and the threat of feelings of guilt subsequent to violating an internalised norm, which in this case is complying fully with the tax laws.

3.5 PROCEDURAL JUSTICE THEORY

Social psychology comprises three key areas of justice: Distributive Justice; Retributive Justice and Procedural Justice (Kirchler, 2007). Distributive Justice refers to the exchange of resources, which includes all benefits and costs.

Retributive Justice refers to the perceived appropriateness of sanctions in cases of norms breaking (Tyler, 2000, quoted in Kirchler, 2007). It is concerned about attribution of responsibility to individuals who are guilty of breaking the norms/wrong-doing, the restoration of damages to the wronged party and the punishment a norm-breaker deserves.

Procedural Justice refers to individuals' subjective evaluations of the justice or fairness of the decision-making process during any disputes resolution (Tyler, 2007). The evaluation process determines whether the procedures were fair or unfair, ethical or unethical, and otherwise accord with individuals' standards of fair processes for interaction and decision making. Procedural Justice can be easily distinguished from subjective assessments of the

fairness of outcomes (Distributive Justice) and the degree to which individuals feel they are gaining or losing resources in the group (outcome favourability).

Two main bodies of theory and research have independently examined the criteria individuals use to evaluate the fairness of a procedure, which include the efforts of Thibaut and Walker (1975) and Leventhal (1980). Thibaut and Walker (1975) developed Procedural Justice Theory (PJT) from their pioneering work on disputes resolution procedures. The findings from this study demonstrate that individuals' evaluations of the fairness of the authorities' decision-making processes and procedures will influence their acceptance of the outcome from any dispute resolution. This hypothesis has been strongly supported by a number of subsequent studies on the resolution of legal disputes (Tyler, 1988). The findings suggest that disputants who are given control of the disputes resolution process, or process control, will be more likely to consider the verdict to be fair, even when the outcome is unfavourable. Process control refers to control over the opportunity to be able to present evidence to support an individual's arguments in respect of the dispute.

Thibaut and Walker (1975) further contend that decision control, which refers to control over the outcome of the dispute, also affects an individual's perception of the fairness of the procedure or procedural fairness. PJT, therefore, asserts that perceptions of procedural fairness, in respect of a disputes process, will increase an individual's level of acceptance of the outcome, even when the outcome is negative or unfavourable to the individual.

Leventhal (1980, p. 36) examined PJT and defined the concept of procedural fairness "as an individual's perception of the fairness of procedural components of the social system that regulate the allocative process." Procedural Justice is considered to be a function of the extent to which a number of procedural justice rules are complied with, or compromised. Leventhal (1980) identified six justice rules, and contends that most people use these rules to evaluate the fairness of the allocative procedures. Individuals will consider the allocative procedures to be fair when certain criteria are satisfied, which include: consistency, accuracy, bias suppression, correctability, representation and ethicality (Leventhal, 1980).

3.5.1 Consistency

The *consistency* rule concerns treating all individuals equally over time. The rule prescribes that allocative resources should be distributed across persons and over time. Leventhal (1980) argues that individuals may believe that procedural fairness is being violated if the procedures appear to lack any consistency. Tyler (2007) adds that individuals would tend to seek a level playing field in which no one is disadvantaged, including them.

Individuals would therefore expect the authorities to base their decisions on the consistent application of the rules and the objective facts.

In order for the taxpayer to accept any outcome from a disputes process, the tax authority must be seen to be consistent in their treatment of all individuals in disputes with the tax authority. Taxpayers who perceive that they are treated in a similar manner to others, and having the tax rules applied in a consistent manner, will tend to be more accepting of the outcome than if they perceive that the disputes process was being applied inconsistently across taxpayers.

3.5.2 Accuracy

The *accuracy* rule refers to the correctness and quality of the decision-making process. The accuracy rule prescribes that the allocative process should be based on good information and an informed opinion. Leventhal (1980) maintains that procedural fairness will be violated if inappropriate information was provided, or information required for the decision making was provided by incompetent observers. It is, therefore, important to ensure that accurate information is provided by competent observers in order to ensure that the procedural fairness of the process will not be perceived to be violated.

The accuracy rule requires the tax authority to ensure correct and accurate information is gathered and used in making decisions relating to the imposition of penalties. Further, the tax authority should ensure that the person who makes the decision (to impose penalties, or the quantum of penalties), must be properly qualified to undertake the task and make the correct decision.

3.5.3 Bias Suppression

The *bias suppression* rule refers to not allowing any favouritism or external bias to enter into the disputes process. Leventhal (1980) maintains that procedural fairness may be perceived to be compromised when there is unrestrained self-interest or devotion to doctrine. Tyler (2007) adds that people are influenced by judgments about neutrality, and that individuals expect the authorities to deal honestly, impartially and objectively, and not to allow their personal values and biases to influence their decisions.

For the tax authority, the bias suppression rule means that any process carried out under the penalties regime, or any other disputes process, should be perceived to be free from any institutional bias, and bias from individual officers. Taxpayers would expect the tax authority to treat them fairly, impartially and objectively during any disputes process.

3.5.4 Correctability

The *correctability* rule is concerned with the flexibility to amend unfair or inaccurate decisions made. Leventhal (1980) contends that the availability of formal or informal appeals procedures at various stages of the allocative process will increase the perceived level of fairness towards the procedure. Individuals are more likely to accept an unfavourable outcome if they perceive that there is an opportunity available for the individual to correct any incorrect decision that may have been made based on incorrect information or assumptions.

Consistent with the PJT, the availability of an appeals procedure in any tax disputes resolution process will enhance taxpayers' perception of the fairness of the process. The tax authority should therefore provide a process, whereby taxpayers can dispute the tax (or penalties) position adopted by the tax authority. Taxpayers' perceptions of procedural fairness will increase if the tax authority provides legitimate avenues for disputing the decisions made by the tax authority, such as, an independent appeals and review unit.[65]

3.5.5 Representation

The *representation* rule refers to the opportunity given to the disputant to be involved in the disputes process. Leventhal (1980) contends that those who are affected by the proposed decisions should be represented in all phases of the disputes process. Leventhal (1980) adds that individuals will attribute greater fairness to allocative procedures when the individuals are involved in the decision-making process. Tyler (2007) adds that individuals will perceive a process to be fair if they are allowed to participate in the resolution of their problems and conflicts. Tyler (2007) maintains that the positive effects of giving respondents the opportunity to participate have been widely supported.

From a tax perspective, the representation rules should ensure that taxpayers' views are included in any tax disputes they may have with the tax authority. Further, the taxpayers' perception of procedural fairness will be compromised if the tax authority does not involve the taxpayer in the disputes process involving the individual.

3.5.6 Ethicality

The final justice rule, *ethicality*, prescribes that allocative procedures must be consistent with basic moral and ethical values of individuals. Leventhal (1980) contends that perceived fairness will be reduced when allocative procedures violate personal standards of ethics and

[65] The Adjudication Unit in the IRD, which operates impartially and independently, provides taxpayers with a legitimate platform to dispute the tax authority's decisions.

morality. Leventhal (1980) further adds that another important aspect of ethicality is that the procedures used should also support individuals' self-respect. This suggests that the authorities should treat individuals politely and with respect. Support for the ethicality rule is provided by a number of researchers who considered the importance of recognising individuals' need to be treated politely and with respect (for example, Tyler & Folger, 1980; and Tyler, 2007).

The ethicality rule should also apply in any tax disputes process. Taxpayers will expect all aspects of any disputes process to be consistent with the taxpayers' moral and ethical values. If the disputes process adopted by the tax authority is perceived to violate the taxpayers' personal standards (which can differ for different taxpayers), perceived fairness of the procedure will be reduced. This will lead to taxpayers not accepting the outcome of the disputes process.

Whilst Thibaut and Walker's (1975) research focuses on judgments of process control, which are used to evaluate the fairness of procedures applied in resolving disputes, Leventhal's (1980) focus was on the use of justice rules to evaluate the fairness of allocative procedures. The six justice rules identified above posit that the relevant defined criteria must be satisfied for a procedure to be perceived as fair.

PJT suggests that the basic criteria used to evaluate the fairness of procedures may change with circumstances, so that an individual can apply procedural rules selectively and follow different rules at different times, based on circumstances (Leventhal, 1980). Leventhal (1980) adds that in some situations, one justice rule may be more relevant than others, resulting in judgments of procedural fairness being dominated by that particular rule. Conversely, in other situations, several justice rules may be relevant, which jointly influence the judgments of procedural fairness. Further, the influence of a justice rule on individual's judgments of procedural fairness is expressed as its weight. Justice rules with greater weights are considered to have greater impact on judgments of procedural fairness, and vice versa.

Murphy (2003) observes that concerns about fairness of procedures remain high, despite criticism from opponents of the theory, who suggest that individuals are more concerned about the favourability of their outcomes, and less concerned about the fairness of procedures (Casper et al., 1988; and Lind et al., 1993). Tyler and Smith (1998) maintain that most individuals' behaviours are strongly associated with perceptions about justice and injustice. Further, procedural justice literature provides evidence to support the view that individuals' experiences with the authorities influence their evaluations of the fairness of the procedures adopted by these authorities (Lind & Tyler, 1988; and Tyler, 2000; 2001). In a tax context, if

individuals perceive a procedure adopted by the tax authority to be unfair, they are more likely to challenge the authority's decisions.

3.6 MOTIVATIONAL POSTURES (SOCIAL DISTANCE)

Motivational Posturing Theory (MPT) was derived from empirical analysis of regulatees and how they perceive those (authorities or regulators) who try to regulate them (Braithwaite and Job, 2003).[66] MPT draws on three bodies of research; first Merton's (1968) Theory of Modes of Adaptation, which acknowledges that socially valued goals can be obstructed, and how individuals will use any means to achieve these goals. The second contributor is PJT and Distributive Justice Theory (DJT), which recognises the importance of social bonds in determining regulatory effectiveness. Finally, Attitude Theory (Lazarus & Folkman, 1984) and Stress Theory (Rokeach, 1973) links the goals and relationships together.

Arguably, anything that jeopardises an individual's sense of self (for example, an obstructed goal) will result in the evaluation of the threat, and the coping responses, in order to protect the self (Rokeach, 1973; and Lazarus & Folkman, 1984 – cited in Braithwaite and Job, 2003). The coping responses in MPT allows social distancing from the authority, so that any 'pro-compliance messages' cannot be heard, or not processed in relation to the protection or promotion of one's sense of self-worth. The objective for those using response regulations is therefore to reduce the social distance between the regulator and the regulatees, in order to increase the regulator's ability to influence the regulatees.

Prior research has used motivational postures to capture the "way regulatees position themselves in relation to regulatory authority" (Braithwaite, 2003a, p.17). Braithwaite (2003a) contends that while authorities have legal legitimacy, they may not have psychological legitimacy. Authorities tend to be evaluated in terms of what they represent and their performance. Individuals and groups tend to develop positions in relation to the authority, based on these evaluations. The psychological concept of this positioning is referred to as social distance (Bogardus, 1928- cited in Braithwaite, 2003a). This term is used to describe the stances that taxpayers openly express in their relationship with the tax authority.

In terms of tax compliance behaviour, the social distance or motivational postures are considered to account for the self-positioning of taxpayers relative to the tax authority (Braithwaite, 2003a). These postures reflect the underlying beliefs and attitudes, which are shared, borrowed, challenged, and elaborated through social communication. Five

[66] MPT is summarised from Braithwaite and Job (2003).

motivational postures, ranging from deference-oriented postures to defiance-oriented postures, were identified as being relevant to tax compliance behaviour: commitment, capitulation, resistance, disengagement, and game playing (Braithwaite, 2003a).

Commitment represents beliefs about the desirability of tax systems and moral obligations to act in the interest of society at large, and pay one's tax willingly. *Capitulation* reflects acceptance of the tax authority as the legitimate authority that will use its power if necessary. *Resistance* refers to a sense of apprehension towards the tax authority's intentions, and to resist the tax authority's power. The *disengagement* posture represents taxpayers who display contempt for the tax authority, and who have decided to disengage from the tax system, thus putting the most social distance between themselves and the tax authority. This is the most difficult posture for the tax authority to deal with (Braithwaite et al., 1994). The last motivational posture, *game playing*, described as attitude towards the legal rules was a later addition (Braithwaite, 2003a).[67]

Braithwaite (2003a) contends that motivational postures are not directly related to behaviour, on the basis that they are fairly broad and attitudinal, rather than specific and behavioural. However, whilst they may not lead directly to certain behaviour, they may precede behaviour. The research model in the current study is based on the TPB, which uses attitudinal variables to predict compliance behaviour. Accordingly, it should be acceptable to include measures of motivational postures to extend the research model proposed for this study. In a tax context, motivational postures or the social distance are considered to account for the self-position in relation to the tax authority (Hartner et al., 2008).

3.7 SUMMARY

This chapter presented and described the Theory of Planned Behaviour (TPB) and selected theories underpinning some of the constructs used in the TPB Model. A more comprehensive review of the TPB was provided because the TPB Model is used as a theoretical framework to develop the research model.

The TPB and its predecessors were developed from Expectancy-Value Theory, which provides a framework for understanding the relationship between attitudes and beliefs, and its influence on motivation to engage in the behaviour of interest. The TPB Model provides an insight into factors that motivate people's behaviour, by examining their beliefs about the outcome from performing the target behaviour, and how this outcome results in attitudes towards the behaviour. The key elements of the TPB were discussed in depth, which include,

[67] This study only examines the four motivational postures and excludes game playing.

attitudes toward the behaviour, subjective norms, and perceived behavioural control. The effect of behavioural intention on behaviour was also discussed. A large body of empirical research, some cited in this study, provides support to the predictive validity for the TPB, thus providing justification for its use in the current tax compliance research.

This chapter then introduced Deterrence Theory and its development from the original work of Becker (1968). Deterrence Theory is based on the rational person, who seeks to maximise utility. Criminal behaviours are deterred by either increasing the probability of arrest, the certainty of conviction of those arrested, or the severity of the punishment. From a tax perspective, the increased probability of detection for noncompliance, together with the increased certainty of punishment and the severity of the punishment, will act as a deterrent. In addition, this chapter discussed the three inhibitory elements of social control considered to control norm violations: fear of legal punishment, which is imposed by the state; fear of social disapproval, which is imposed by peers; and the influence of moral conscience, which is imposed by the individual.

Procedural Justice Theory (PJT) was then presented and was described as a process by which individuals apply one or multiple justice rules to determine the allocative fairness of a process. If the process is perceived to be procedurally fair, the authority will have legitimacy, and any decisions made by the authority are more likely to be accepted, even if the outcome is unfavourable.

The final section of this chapter described the social distance, or motivational postures, which were incorporated into the research model. Motivational postures are used by taxpayers to express their relationship with the tax authority. The postures range from compliance oriented attitudes (or deference) to noncompliance oriented attitudes (defiance), and individuals adopt different postures in response to different signals from authority. The more social distance individuals place between themselves and the tax authority, the more difficult it is for the authority to deal with this group. Conversely, those who place the least distance between themselves and the authority tend to accept the legitimacy of the authority, making it easier for the authority to regulate this group.

The present research draws upon the theories discussed in this chapter and builds these into the research model, which will be used to study tax compliance behaviour of New Zealand taxpayers. The next chapter of this study outlines the development of the research model (which includes the key variables based on theories discussed in this chapter), and the hypotheses, including the theoretical justification for the hypotheses tested.

CHAPTER 4
THEORETICAL FRAMEWORK AND THE DEVELOPMENT OF HYPOTHESES

4.1 INTRODUCTION

This chapter presents the research hypotheses of the current study. The key objective of this research is to examine the influence of the beliefs and attitudinal elements of the Theory of Planned Behaviour (TPB) on tax compliance behaviour. Further, a selected number of other constructs incorporated into the current research model were also examined, and their effects on compliance behaviour were also tested. Section 4.2 of this chapter presents the theoretical frameworks, which include: the TPB; Procedural Justice Theory (PJT) and the Process Model of Regulation (PMR) which is based on PJT (with brief references made to Deterrence Theory and Motivational Posturing Theory). Section 4.3 describes the development of the hypotheses in respect of the research model, and the final section 4.4, concludes by providing a summary of this chapter.

4.2 THEORETICAL FRAMEWORK

This study draws upon four main theoretical frameworks to guide the current research. The first, Ajzen's (1991) TPB, posits that individuals make rational choices to engage (or not engage) in the behaviour of interest.[68] The choices made are influenced by individuals' own beliefs about the outcome and the evaluation of the favourableness (or unfavourableness) of the outcomes from engaging in the target behaviour. These beliefs and expected outcomes underlie three conceptually distinct salient beliefs, which are central to the TPB Model: behavioural beliefs (perceived beliefs about the likely outcomes from engaging in the target behaviour and the evaluation of the desirability of these outcomes); normative beliefs (perceived social pressure); and control beliefs (perceived ease of engaging in a desired behaviour). Collectively, these elements influence individuals' intentions to engage in behaviour.

Since its development some twenty years ago, the TPB has been widely used to explain human behaviour. The literature suggests that the TPB is one of the most influential models in predicting behavioural intentions and behaviours, and it has been comprehensively validated in the behavioural domain (Ajzen, 1991; Ajzen & Driver, 1991; Madden et al., 1992; and Parker et al., 1995). Further, the TPB provides a comprehensive theory of the antecedents to behaviour and a structure for extending prior research of the model (Bobek et al., 2007).

[68] A detailed description of the TPB is presented in Chapter 3 of this study.

Despite the successful use of the TPB in behavioural research, only three studies (Bobek & Hatfield, 2003; Trivedi et al., 2005; and Saad, 2009; 2011) have successfully adapted the theory to examine tax compliance behaviour.[69] Although there is overwhelming support for the TPB Model to predict behaviour, researchers continue to call for additional variables to be added to the Model, in an attempt to further enhance the Model's predictive capability (Conner & Armitage, 1998; and Lutz, 2011).

In response to this call, a number of constructs that are supported in prior literature as having an influence on tax compliance behaviour were added to the current research model: societal norms; tax system; tax authority; and motivational postures. Two further constructs were also added which are hypothesised to influence attitudes toward performing the target behaviour and compliance behaviour: justice elements of the Compliance and Penalties Regime (CPR), and effectiveness of the CPR. All the components incorporated into the TPB based research model, which are used to predict compliance behaviour, are presented and described in section 4.2 of this chapter. This includes all the hypotheses developed for this research.

The second theoretical framework that underpins this study is PJT, developed by Thibaut and Walker (1975) and Leventhal (1980).[70] Procedural Justice concerns the perceived fairness of the procedures adopted during decision making, and the perceived treatment an individual receives from the authority or the decision maker. PJT predicts that individuals' assessments of any perceived injustice of a procedure may result in disobedience, or result in the authority's decisions not being accepted by these individuals. Conversely, perceived fairness of a procedure will result in individuals accepting even unfavourable outcomes. Thibaut and Walker (1975) demonstrate that individuals' assessments of the fairness of the decision-making procedures lead to the acceptance of the legitimacy of the authority making the decisions, and will positively influence their satisfaction with the authority's decisions or outcomes.

Evaluations of procedural injustice are related to the perceived unfairness of the methods and procedures used to determine the outcomes (Procedural Justice). If the approaches by which outcomes are distributed are seen to be fair, then discrepancies in outcomes may also be judged to be fair (Tyler, 2001). Consistent with Tyler's argument, evaluations of the fairness of decisions made by the tax authority when deciding to impose penalties may lead to taxpayers accepting the outcomes, provided the process is also judged to

[69] To the best of the author's knowledge, these are the only four published studies that applied the TPB to examine tax compliance behaviour. Hanno & Violette (1996) used the TRA, which is the predecessor of the TPB.

[70] PJT was discussed in detail in Chapter 3 (section 3.5).

be fair. Murphy (2005) cautions that the use of intimidation on taxpayers to comply may undermine the legitimacy of the tax authority. Leventhal (1980) contends that the fairness of most procedures are judged by their perceived adherence to one or more of the six justice rules: consistency of application; bias suppression; use of accurate information; correctability of decisions based on incorrect information; adequate representation of the concerns of those affected; and the ethicality of the decision maker. This study will focus on four of the six justice rules of PJT: accuracy; consistency; bias suppression; and representation, which will be used to test the relationships between tax enforcement procedures and attitudes towards compliance, and also, between tax enforcement procedures and compliance behaviour. The author considers these four justice rules to be the most relevant for evaluating the influence of the perceived fairness of the CPR on compliance. Leventhal (1980) confirms that it is not necessary to use all six criteria or justice rules to evaluate the fairness of a procedure.

The research model also includes Tyler's (2010) PMR, which was developed from PJT. PJT[71] has important implications for legal authorities. The authorities are entrusted with establishing a law-abiding society by securing citizens' voluntary compliance with the legal authorities' decisions, and long-term compliance with the law (Tyler, 2010). Similarly, the PMR may have important implications for the tax authority, whose role is to ensure all taxpayers voluntarily comply with the tax laws.

The PMR takes into consideration the limited effectiveness of criminal sanctions in encouraging compliance and cooperation (Tyler, 2010). Tyler (2010) added that, although authorities may employ deterrence policies based on sanctions and threats, effective social control or regulation is reliant upon individuals' voluntary self-regulation. The process-based model of regulation, proposed by PJT, emphasises the procedural justice of legal authorities, rather than the deterrent effects of sanctions. The PMR posits that "the effects of procedural justice during interactions with legal authorities can continue over time and eventually lead to voluntary cooperation of and support for legal authorities in one's daily life" (Tyler, 2010, p. 974). This suggests that the effects of frequent interactions involving positive justice judgments influences individuals' evaluation about the legitimacy of the legal authority. The perceived legitimacy in turn will lead to feelings of obligation to observe the laws.

Thus, the PMR emphasises the key role of procedural justice judgments in influencing individuals' current and future compliance behaviour. The tax authority uses a range of enforcement and administrative tools to deter noncompliance with the tax legislation. Based on the success of the PMR in encouraging voluntary compliance with legal laws, the PMR

[71] A description of the PJT is presented in Chapter 3.

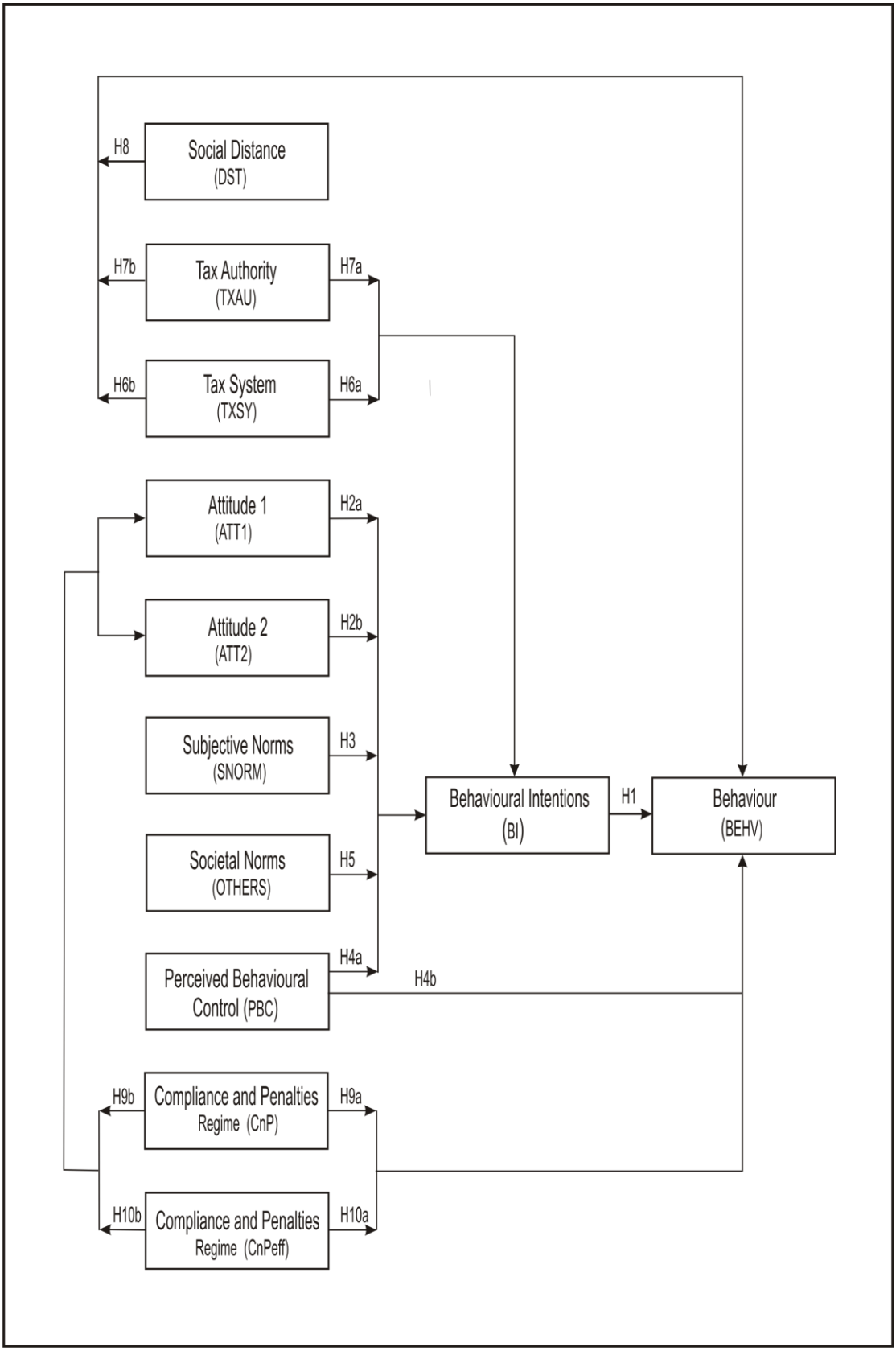
can also be successfully applied by the tax authority to influence compliance behaviour. This can be achieved by increasing the individuals' perceptions of the legitimacy of the tax authority, which in turn will encourage taxpayers to voluntarily comply with their tax obligations. This study will therefore focus on the perceptions of the taxpayer towards the tax authority, and examine the relationships between the tax authority and taxpayers' compliance behaviour.

The third and fourth theoretical frameworks used to develop the hypotheses which were discussed in detail in Chapter 3 include: Deterrence Theory (to measure attitudinal beliefs and effectiveness of the CPR); and Motivational Posturing Theory (MPT) (to measure the social distance between taxpayers and the tax authority). In brief, Deterrence Theory is based on the premise that taxpayers will be deterred from noncompliance by the threat of legal and/or non-legal sanctions, whereas MPT is based on the assumption that taxpayers who place the most social distance between themselves and the tax authority are less compliant than those with the least social distance between themselves and the tax authority.

4.3 DEVELOPMENT OF THE HYPOTHESES

The preceding sections provide evidence in support of the propositions that attitudes (based on both legal and non-legal sanctions), subjective norms, and perceived behavioural control collectively influence taxpayers' intentions to comply (or not comply) with their tax obligations. Further, in terms of the current research model, the previous section and the next ten sections also support the propositions that: societal norms; perceptions of the tax authority; perceptions of the tax system; and the social distance between taxpayers and tax authority; together with the TPB constructs, collectively influence taxpayers' intentions to comply (or not comply) with the tax laws. Support is also provided for the propositions that the justice elements of the CPR and the perceived effectiveness of the CPR contribute towards influencing the attitudes of taxpayers, and also compliance behaviours. These propositions and hypotheses are reflected in Figure 4.1. The supporting hypotheses are outlined in the remainder of this section.

Figure 4.1: Research Hypotheses



4.3.1 Influence of Behavioural Intentions

Behavioural intention is an antecedent to actual behaviour (Ajzen, 1991). The TPB posits that behavioural intention is the most influential predictor of behaviour. A positive intention to comply with the tax laws will positively influence tax compliance behaviour. This prediction is reflected in the following hypothesis, which proposes to test the relationship between behavioural intention and behaviour:

H_1: POSITIVE BEHAVIOURAL INTENTIONS TO COMPLY WILL POSITIVELY INFLUENCE TAX COMPLIANCE BEHAVIOUR.

4.3.2 Influence of Attitudes

Attitudes can influence a person's intention by increasing the person's motivation to engage in a particular behaviour. That is, individuals are more likely to engage in behaviours that are perceived to have favourable outcomes for them, and are less likely to engage in activities that are associated with unfavourable outcomes.[72]

Attitudes based on non-legal sanctions include measures of guilt feelings, sense of civic duty and moral values. These are collectively referred to as tax morale, and are considered to have significant influence on tax compliance behaviour (Hanno & Violette, 1996; Kirchler, 2007; Kornhauser, 2007; and Torgler, 2007).

Attitudes based on legal sanctions include measures of perceived probability of detection, perceived certainty of punishment and perceived severity of penalties. A majority of the available literature on tax compliance, based on the economic models of tax compliance, report a significant relationship between these elements of legal sanctions and tax compliance behaviour (Jackson & Milliron, 1986; Carnes & Englebrecht, 1995; Maciejovsky et al., 2001; and Richardson & Sawyer, 2001). However, an increasing number of studies indicate the lack of this predicted effect on tax compliance (Kirchler, 2007; Kornhauser, 2007; and Torgler, 2007).

The prediction is that taxpayers with a positive attitude (based on informal or non-legal sanctions) towards tax compliance are more likely to develop strong intentions to comply with their tax obligations. Conversely, taxpayers with a positive attitude based on effects of formal (or legal) sanctions will not have any significant effect on behavioural intentions. This is reflected in the following two hypotheses, which propose to test the relationships between attitudes and intentions to comply:

[72] Two constructs measure attitude, one is based on legal sanctions and the other based on non-legal sanctions.

H_{2a}: POSITIVE ATTITUDES (BASED ON INFORMAL SANCTIONS) TOWARDS TAX COMPLIANCE WILL HAVE A POSITIVE EFFECT ON BEHAVIOURAL INTENTIONS.

H_{2b}: POSITIVE ATTITUDES (BASED ON FORMAL SANCTIONS) TOWARDS TAX COMPLIANCE WILL NOT HAVE ANY EFFECT ON BEHAVIOURAL INTENTIONS.

4.3.3 Influence of Subjective Norms

The TPB predicts that subjective norms, which comprise of normative beliefs and motivation to comply, will influence individuals' intentions to engage in target behaviours (Ajzen, 2010). Normative beliefs, for the purpose of this study, were operationalised with three measures: perception of important referent's expectations, perception of important referent's own behaviour, and perception of the threat of losing important referent's respect.

Individuals who believe that important referents think they should engage in the target behaviour, and who are motivated to conform to important referents' expectations, will hold a positive subjective norm (Fishbein & Ajzen, 2010). Conversely, if the individual perceives that important referents think that the individual should not engage in the behaviour, a negative subjective norm will result. Further, an individual who is less motivated to comply with important referents' expectations will hold a relatively neutral subjective norm. In a tax context, individuals who believe an important referent expects them to comply with their tax obligations will conform, provided they are also motivated to do so.

Empirical evidence provides support that taxpayers who believe their friends and acquaintances are noncompliers are more likely to not comply themselves (Grasmick & Scott, 1982; and Spicer, 1989). Consistent with these findings, taxpayers who believe that important referents are compliant (or not compliant) will themselves comply (or not comply).

Several studies have identified a relationship between the threat of losing respect from peers and tax compliance (Grasmick & Scott, 1982; and Grasmick & Bursik, 1990). Individuals, who believe that they would lose the respect of their peers or referents if they do not comply, and who value the referents' respect, are more likely to comply. Although in most cases individuals' tax compliance decisions are not publicly available, the perceived fear of losing their peers' respect will, nevertheless, act as a deterrent against noncompliance.

Based on the above predictions, a taxpayer's behavioural intention will be influenced by perceived social pressures from relevant referents, and the strength of the taxpayer's motivation to meet the referents' expectations. This prediction is stated formally in the

following hypothesis, which proposes to test the relationship between subjective norms and behavioural intention:

H_3: POSITIVE SUBJECTIVE NORMS WILL POSITIVELY INFLUENCE BEHAVIOURAL INTENTIONS.

4.3.4 Influence of Perceived Behavioural Control

The TPB posits that an individual's behaviour can be predicted by the individual's appraisal of his or her ability, and the perceived ease (or difficulty) in performing (or refraining from or avoiding) the target behaviour (Ajzen, 1991). Control is achieved by having the relevant skills, opportunities, resources and the absence of any obstacles in performing the desired behaviour (Madden et al., 1992). PBC was operationalised by three variables: presence (or absence) of opportunity; visibility of the income (third party reporting); and financial distress (cash flow problems). Those with the structural opportunity have more control over their income, and therefore will have a higher level of control over their tax reporting behaviour (Warneryd & Walerud, 1982; Robben et al., 1990; and Slemrod, 2007). Income subject to third party reporting or income visibility can exert a significant influence on compliance (Kagan, 1989; and Carnes & Englebrecht, 1995). A highly visible income stream would impede or represent an obstacle to any noncompliant intentions. Warneryd and Walerud (1982) suggest that financially distressed individuals are more likely to engage in tax evasion than those experiencing less or no economic strain. The lack of funds to pay taxes would inhibit or present an obstacle to any compliance intentions taxpayers may have. Studies have also demonstrated that financial constraints have a direct and strong influence on the compliance behaviour of self-employed taxpayers (Loo et al., 2008).

The survey instrument measures the degree of control a person perceives (s)he holds for underreporting income. A lower degree of perceived control due to lack of opportunity, income visibility and income subject to third party reporting may impede a person from undertaking noncompliant behaviour. Therefore, the greater the person's beliefs about the presence of factors that may impede noncompliant behaviour, the greater will be the likelihood of them complying with the tax laws. This prediction is stated formally in the two following hypotheses, which test the relationships between PBC and behavioural intentions, and between PBC and behaviour:

H_{4a}: LOWER DEGREES OF PERCEIVED BEHAVIOURAL CONTROL OVER NONCOMPLIANCE WILL POSITIVELY INFLUENCE BEHAVIOURAL INTENTIONS.

H_{4b}: LOWER DEGREES OF PERCEIVED BEHAVIOURAL CONTROL OVER NONCOMPLIANCE WILL POSITIVELY INFLUENCE TAX COMPLIANCE BEHAVIOUR.

4.3.5 Influence of Societal Norms

The literature provides evidence that individuals will comply with their tax obligations as long as they believe that compliance is prevalent among the general population. Cialdini and Trost (1998), who referred to societal norms as descriptive norms, define this as values or principles developed from observing how others behave in certain situations. In the current study, societal norms refer to the perception of the tax compliance behaviour of society at large; in particular, the perception of whether tax compliance (or noncompliance) is prevalent in society.

The influence of societal norms is considered to be an important determinant of the tax compliance behaviour of individuals. If a taxpayer believes that other taxpayers are cheating with their taxes, or even accepting noncompliant behaviour from others, then the taxpayer will also be tempted to cheat with his or her taxes (Bergman, 2002; Sandmo, 2005; and Alm, 2012). Alm (2012) contends that the more prevalent noncompliance is perceived to be, the more socially acceptable noncompliance would become, leading to lower subjective probability of detection.

Based on prior studies, the proposition is that taxpayers will comply with their tax obligations as long as they believe that compliance is the society norm. This prediction is reflected in the following hypothesis, which proposes to test the relationship between individual taxpayer's perception of the tax compliance behaviour of the general population of taxpayers, and the individual's own compliance behaviour:

H_5: PERCEPTIONS OF THE PREVALENCE OF TAX COMPLIANCE BY THE GENERAL POPULATION (POSITIVE SOCIETAL NORMS) WILL POSITIVELY INFLUENCE BEHAVIOURAL INTENTIONS.

4.3.6 Influence of Perceptions of the Tax System

Evidence from the tax compliance literature suggests that individuals' attitudes and perceptions of the tax system are related to compliance behaviour. Perceived inequalities in the tax system are associated with noncompliant behaviour (Cowell, 1990). Sheffrin and Triest's (1992) review of attitudinal literature provides evidence that individuals' attitudes and perceptions of the tax system are related to tax compliance. Studies have even

demonstrated that attitudes towards the tax system are more important than other economic variables in explaining noncompliant behaviour (Kirchler, 1999).

The predicted effects of a favourable or positive perception of the tax system positively increase a person's tax compliance behaviour. Conversely, they are less likely to comply fully if they view the tax system unfavourably. This leads to the proposition that a favourable view of the tax system is a positive predictor of intentions to comply and tax compliance behaviour. The prediction is stated formally in the following two hypotheses, which test the relationships between perceptions toward the tax system and behavioural intentions, and between perceptions toward the tax system and behaviour:

H_{6a}: FAVOURABLE VIEWS OF THE TAX SYSTEM WILL HAVE A POSITIVE INFLUENCE ON BEHAVIOURAL INTENTIONS.

H_{6b}: FAVOURABLE VIEWS OF THE TAX SYSTEM WILL HAVE A POSITIVE INFLUENCE ON TAX COMPLIANCE BEHAVIOUR.

4.3.7 Influence of Perceptions of the Tax Authority

The literature on PJT's PMR (discussed earlier in this chapter) theorises that favourable perceptions of the tax authority will increase the authority's legitimacy (Gilligan & Richardson, 2005; and Tyler, 2010). The legitimacy of the tax authority, in turn, will result in taxpayers feeling obliged to obey the tax laws administered by the legitimate tax authority. Based on literature from PJT, the above construct was developed to measure the perceived fairness of the tax authority in its administration and enforcement of the tax laws.

The PMR suggests that taxpayers who have a positive view of the tax authority will not question its legitimacy, and thus they will be more likely to comply with the tax authority's rules. A more positive attitude towards the tax authority will increase the taxpayer's intentions to comply with the tax rules. Conversely, a negative view will lead to less motivation to comply, resulting in lowering the taxpayer's intentions to comply, and lowering the level of compliance. The proposed hypothesis attempts to test the relationship between favourable (or unfavourable) perceptions towards the tax authority and behavioural intentions, and between behaviour. The predictions are formally stated in the following two hypotheses:

H_{7a}: POSITIVE VIEWS OF THE TAX AUTHORITY WILL POSITIVELY INFLUENCE BEHAVIOURAL INTENTIONS.

H_{7b}: POSITIVE VIEWS OF THE TAX AUTHORITY WILL POSITIVELY INFLUENCE TAX COMPLIANCE BEHAVIOUR.

4.3.8 Influence of Motivational Postures (Social Distance)

The theoretical framework presented in the previous section suggests that when taxpayers face regulations imposed by the tax authorities, they respond in ways that meet their own interests and needs (Braithwaite, 2003a). Taxpayers respond by adopting one of the motivational postures which corresponds to the distance taxpayers have placed between themselves and the authority. A deference-oriented motivational posture reflects the least social distance between the taxpayer and the tax authority, whereas, a defiance-oriented motivational posture places the most social distance between the taxpayer and the tax authority. Consistent with the theoretical framework, it is predicted that the least social distance a taxpayer places between himself or herself and the tax authority (the deference postures) will be reflected in more positive tax compliance behaviour. The predicted influence of taxpayer's motivational posture on tax compliance behaviour is formally stated in the following hypothesis:

H_8: DEFERENCE POSTURES (OR LEAST SOCIAL DISTANCE ADOPTED) WILL POSITIVELY REFLECT A MORE POSITIVE TAX COMPLIANCE BEHAVIOUR.

4.3.9 Influence of Justice Rules of the Compliance and Penalties Regime

The predictions from the theoretical framework presented in the previous section suggest that taxpayers' perceived procedural fairness of the application of the CPR by the tax authority may influence taxpayers' compliance behaviour, and attitudes towards compliance (Thibaut & Walker, 1975; and Leventhal, 1980). Generally, equity considerations (based on procedural justice rules) have received much attention in the tax compliance literature. Experimental and survey findings indicate that higher equity leads to higher compliance behaviour, while lower perceived equity leads to lower tax compliance (Torgler, 2007).

Based on this argument, the prediction is that taxpayers who perceive the enforcement procedures of the CPR to be procedurally fair are likely to be more compliant, and this perception is also likely to positively influence attitudes. The predictions are summarised in the following two hypotheses, which test the relationships between perceived procedural fairness of the CPR with tax compliance behaviour, and attitudes, respectively. These predictions are formally stated in the hypotheses below:

H_{9a}: FAVOURABLE JUSTICE PERCEPTIONS OF THE COMPLIANCE AND PENALTIES REGIME WILL POSITIVELY INFLUENCE TAX COMPLIANCE BEHAVIOUR.

H_{9b}: FAVOURABLE JUSTICE PERCEPTIONS OF THE COMPLIANCE AND PENALTIES REGIME WILL POSITIVELY INFLUENCE ATTITUDES TOWARDS TAX COMPLIANCE.

4.3.10 Effectiveness of the Compliance and Penalties Regime

Deterrence Theory posits that the perceived probability (or threat) of penalties will deter noncompliance or encourage compliance (Alm et al., 1990; and Maciejovsky et al., 2001). It therefore follows that the perceived effectiveness of the CPR will also deter noncompliant behaviour. While a large body of literature has examined the effect of penalties, very few, if any, studies have examined the influence of the perceived effectiveness of a penalties regime on attitudes and tax compliance behaviour, respectively. The effectiveness of the CPR is operationalised by three measures which appraise respondents' perceptions of the general effectiveness of the regime in deterring noncompliance. These include: the perceived effectiveness of the CPR; the fear of being penalised under the CPR; and to avoid penalties.

The prediction proposed in this study is that taxpayers' decisions to comply are influenced by the perceived effectiveness of the CPR regime in deterring noncompliant behaviour. This prediction is reflected in the following two hypotheses, which propose to test the relationships between the perceived effectiveness of the CPR, and attitudes (based on legal and non-legal attitudes), and on behaviour, respectively. The predicted effects of perceived effectiveness of the CPR on taxpayers' attitudes towards compliance behaviour, and behaviour, are stated in the following two hypotheses:

H_{10a}: PERCEIVED EFFECTIVENESS OF THE COMPLIANCE AND PENALTIES REGIME WILL POSITIVELY INFLUENCE TAX COMPLIANCE BEHAVIOUR.

H_{10b}: PERCEIVED EFFECTIVENESS OF THE COMPLIANCE AND PENALTIES REGIME WILL POSITIVELY INFLUENCE ATTITUDES TOWARDS TAX COMPLIANCE.

In summary, it is proposed that the TPB and other behavioural determinants incorporated into the TPB based research model will be able to predict tax compliance behaviour.

4.4 SUMMARY

This chapter presented the theoretical framework and the development of the research hypotheses to be tested. The discussions presented concern the TPB, the theoretical characteristics of the components of the TPB, and the proposed effects of these components on behavioural intentions and behaviour.

This study focuses on compliance (noncompliance) with the tax rules, and examines the influence the TPB constructs have in predicting compliance behaviour. Further, this study will also attempt to examine the contribution of a number of other elements outside the TPB in predicting tax compliance behaviour. A number of hypotheses testing the influence of the TPB elements and other compliance determinants on compliance behaviour were proposed in this chapter.

In terms of the basic TPB based research model, six hypotheses were developed to test the effects of the elements of the TPB: attitudes based on informal sanctions (H_{2a}), attitudes based on formal sanctions (H_{2b}), subjective norms (H_3), and perceived behavioural control on intentions to comply (H_{4a}) and on behaviour (H_{4b}). A further hypothesis was developed to test the effect of intention on behaviour (H_1). Informal sanctions (or tax morale) are gaining prominence amongst researchers, due mainly to recent evidence which suggests that tax morale is more influential on compliance behaviour than legal sanctions.

An additional six hypotheses were developed to test the effects of additional constructs used to extend the TPB based research model. These hypotheses were developed to test the effects of the following constructs: societal norms (H_5); perceptions of the tax system (H_{6a}, and H_{6b}); perceptions of the tax authority (H_{7a}, and H_{7b}); and social distance or motivational postures (H_8), on intentions and/or compliance behaviour.

Four further hypotheses were developed to test the procedural justice perceptions and perceived effectiveness of the CPR on attitudes (based on formal and informal sanctions), and also on tax compliance behaviour. Hypotheses H_{9a} and H_{9b} were established to evaluate the influence of the procedural justice perceptions of the CPR on behaviour and attitudes, whereas Hypotheses H_{10a} and H_{10b} were developed to measure the influence of the perceived effectiveness of the CPR on behaviour and attitudes. The next chapter presents the research methodology employed to test the hypotheses outlined in this chapter.

CHAPTER 5
RESEARCH METHODOLOGY AND DESIGN

5.1 INTRODUCTION

This chapter presents the methodology applied to test the hypotheses developed in the previous chapter. The first part of this chapter discusses the research design and the approach taken in developing the survey instrument and in collecting the survey data. Section 5.2 begins by stating the objectives of the current research. This is followed with section 5.3 setting out the research design which includes the development of the survey instrument. Section 5.4 details the model constructs and measures used in the current study.

The second part of this chapter is devoted to explaining the analytical approach used for the data analysis. Section 5.5 describes the process adopted for the data preparation and various preliminary analysis carried out on the survey data. This section also provides a description of the Structural Equation Modelling (SEM) methodology and the approach used in evaluating the measurement and structural models. The last section, section 5.6 presents a summary of this chapter.

5.2 RESEARCH OBJECTIVES

The key objective of this research is to examine the role beliefs and attitudes have on tax compliance behaviour identified in the literature, within the Theory of Planned Behaviour (TPB) framework. The research model was extended to incorporate other variables identified in the literature as having some influence on tax compliance behaviour. The secondary objective is to test the applicability of a research model based on the TPB, and provide justification for using a new analytical tool (PLS-Graph) which has rarely been used in tax compliance research. A detailed description of the research objective is presented in Chapter 1.

5.3 RESEARCH DESIGN

5.3.1 Data Collection

The reliability of the results from any research depends on the methodology adopted to collect the data. Sandford (1995) emphasised the basic requirements of an appropriate methodology as one which has a good representative sample, relevant questions, and sufficient response rate. However, measuring tax compliance behaviour has been fraught with problems due to the unobservable and, in most cases, unverifiable nature of the behaviour

under study. This is compounded by the reluctance of some tax authorities to provide compliance data for research. Therefore, the principal data collection method adopted for this research is the survey method, despite the various concerns raised which include: the validity of self-reports, nonresponse bias, small sample size, missing data and the influence of premiums.[73]

Survey research remains one of the main sources of data collection in the social sciences (Ziegler, 2006). In the field of tax compliance research, surveys are commonly used as the main method of data collection, given their ability to elicit responses on unobservable measures used to study compliance behaviour. This method is considered to be the most economical and feasible method (in comparison to other methods) to elicit the views of a large number of participants on a nationwide basis (Sandford, 1995). There are a number of survey methods available for collecting data; some of the more common approaches are face-to-face questionnaire and surveys by telephone, mail (paper), email (electronic) and the World Wide Web/Internet.

(a) Mail Surveys

Mail surveys are one of the most popular tools in the study of social behaviour (Brehm, 1993; and Ziegler, 2006). It is considered to be an important research tool capable of capturing a wide range of explanatory variables known only to the subjects, including: values and attitudes; expectations of risk of compliance/noncompliance; and other psychological factors that may affect compliance behaviour (Collins et al., 1992). Surveys, however, cannot measure behaviour but can only measure people's perceptions of the behaviour (Sherblom et al., 1993). Surveys are also comparatively cheaper to undertake than other data collection methods while providing a wider coverage of the population. In addition, surveys can guarantee complete anonymity to respondents, whereas interviews or case studies may not provide the same level of anonymity to respondents, rendering them less effective in this instance.[74]

Recent tax compliance studies have moved away from the traditional models of tax compliance, largely based on Allingham and Sandmo's (1972) Economic Deterrence Model of tax compliance, which is easily tested using experimental data (for example, audit rates and tax rates), to more complex models using noneconomic variables that cannot be easily observed or measured. This has led to an increase in the use of self-reports capable of measuring unobserved variables. Armitage and Conner's (2001) meta-analyses provide

[73] Most of these concerns associated with the survey method are addressed in section 5.5 of this chapter.
[74] The questionnaire developed for this study contains personal and sensitive questions.

evidence that the prediction of self-reported behaviour in TPB is superior to observed behaviour. This clearly suggests that the survey method, which is based on self-reports and capable of measuring noneconomic variables, has its place in tax compliance research (Andreoni et al., 1998). The nature of this study, which involves examining sensitive behavioural variables that cannot be observed, renders the experimental approach, interviews and case studies unsuitable. In addition, given the unavailability of archival and actual data from the Inland Revenue Department (IRD), the survey method is considered the best alternative for collecting the data required for this research. Further, the survey methodology enables researchers to transfer and apply the knowledge gained from a representative sample to a larger target population (Creswell, 2003). The present study therefore utilised a mail-based survey for the taxpayer population.

(b) Web-Based Surveys

The increasing popularity of web-based surveys is evident by the number of researchers using this survey technique in a variety of research areas (Shi & Fan, 2008). The advantages of using web-based surveys have been well documented (for example, Dillman, 2000; and Cobanoglu et al., 2001). For a specific population that regularly use the internet, the web has been found to be a useful means of conducting research (Couper et al., 2001; and Sills & Song, 2002). Possible advantages of using the Internet include cost savings related to eliminating the printing and mailing of survey instruments (Cobanoglu et al., 2001), as well as time and cost savings in having the responses in an electronic form ready for analysis.

Past studies measuring response rates between mail and web-based surveys have produced mixed results (Greenlaw & Brown-Welty, 2009). In contrast, recent studies have shown an increase in web-based response rates, as compared to the response rates from mail surveys (McCabe, 2004; Kiernan et al., 2005; Michaelidou & Dibb, 2006; and Greenlaw & Brown-Welty, 2009), however, there is still room for improvement. This may be attributed to the fact that less time and attention have been devoted in the past to developing and testing motivating tools to increase web-based surveys' responses; compared to the well-developed Dillman's (2000) 'tailored design method' (Kaplowitz et al., 2004). Michaelidou & Dibb (2006) provide some useful suggestions for designing and improving online surveys which includes: ensuring complete anonymity and privacy, targeting the appropriate population, and providing incentives to encourage response rates. Couper (2000) cautions that the implementation approaches that were beneficial for mail surveys may not translate directly to response rate benefits for web-based surveys. Successful administration of web-based surveys could also be affected if respondents treat legitimate survey contacts as spam mail/email (Porter &

Whitcomb, 2007). Findings of studies comparing the response rates of web-based surveys with mail surveys also reveal a significant age difference in respondents of mail and web-based surveys. This suggests that web-based surveys could be used successfully when targeting younger subjects or populations with full access to the Internet.

The current study targets two other populations: members of the New Zealand Institute of Chartered Accountants (NZICA), and the New Zealand Law Society (NZLS). The majority of NZICA and NZLS members have full access to the Internet. Therefore, the web-based survey with its associated low cost was considered a suitable data collection method for these two selected groups. This study therefore utilised the Internet to distribute the self-administered electronic survey instrument to these two target groups.

5.3.2 Questionnaire Development

(a) Mail Survey

The questionnaire, as presented in Appendix 3, was divided into five sections. Section A contained 28 questions based on the TPB. Section B contained a list of civil offences and instructions for rating and ranking these offences in the order of perceived severity. In Section C, questions were set out under the following sub-headings: *The Tax System, The Penalty System, The Tax Authority, Perception of Other Taxpayers* and *General Views*. The second part of Section C applied only to respondents previously subjected to the penalties regime, and contained questions to elicit their views on the processes and experiences that they went through. The final section contained questions measuring demographic variables.

To increase the response rate, the widely accepted elements of the 'tailored design method' for mail surveys developed by Dillman (1978; 2000) were adopted in the design and distribution of the survey instrument. Care was taken in the design and layout of the questionnaire to minimise the risk of respondents missing questions. Consistent with Dillman (1978; 2000), most questions measuring the latent variables integrated into the research model were randomly distributed throughout the survey instrument, in an attempt to minimise any potential method bias that may be introduced into the dataset (Straub et al., 2004). The questions were evenly distributed and well-spaced and minimal effort was required to complete the questionnaire.[75] Clear instructions were also provided at the beginning of each section in the questionnaire. Respondents were also given the option of adopting a neutral position if they did not wish to respond with a positive or negative answer. In addition,

[75] Respondents are only required to tick or circle their selected answer to each question.

respondents were given the option of not answering several sensitive questions.[76] Consistent with Dillman (2000), care was also taken to ensure that the first question did not appear to be threatening or intimidating to respondents. Finally, the questionnaire was printed in a booklet form, with questions printed on both sides of the eight page booklet, to reduce its size and to enhance its ease of handling.

A one page covering letter (set out in Appendix 4) was included, explaining the nature of the survey and the importance of respondents' feedback. For a professional look, and to provide some credibility to the survey, the covering letter was printed on the University of Canterbury's letterhead. The contact details of the senior academic supervisor and the author were also provided. Respondents were further advised that participation in the survey was voluntary. The letter also assured respondents complete anonymity of their responses.

(b) Web-Based Survey

The questions in the web-based survey were identical to the mail survey instrument except for the addition of two extra questions based on promoter penalties.[77] Equal consideration was given to the development of the web-based survey, which was developed with the assistance of the Information Technology Department at the University of Canterbury.[78] In the main body of the questionnaire, specific instructions were inserted on how to take each necessary computer action to complete the questionnaire. Once the survey was completed respondents were able to submit the survey by clicking on the "submit" button. This would trigger a message thanking respondents for their participation. Respondents were also advised to email the researcher separately if they wished to request a summary of findings.

5.3.3 Population and Sample Selection

When undertaking any survey it is important to ensure that the sample population, sample frame, sample and sample size are correctly identified (Dillman, 2000). The three survey populations targeted for this study are New Zealand taxpayers, tax agents and tax lawyers.

(a) New Zealand Taxpayers

The main study involves examining the tax compliance behaviour of New Zealand taxpayers; therefore the survey population consists of all New Zealand tax residents. The

[76] These questions relate to respondents' past noncompliant behaviour.

[77] The author felt that the two additional questions were more relevant to tax agents than the general taxpayers and was added for future use (that is, for the purposes of future publication).

[78] The survey was linked to http://survey.it.canterbury.ac.nz/phpsurveyor/index.php?sid=81.

sample frame in this case is all individuals listed in the General Electoral Roll (a proxy for taxpayers),[79] and the sample population consists of the 1,000 individuals randomly selected from the General Electoral Roll.

(b) Tax Agents and Tax Lawyers

In terms of the other two groups (tax agents and tax lawyers), the sample frame consisted of all members listed in their respective databases, while the sample population consisted of the 1,000 members randomly selected to participate in this study. The survey population at the time of distribution of the survey instruments was: 29,435 members of NZICA, and 266 members of NZLS whose work comprised more than 50 percent tax work. These two sub-groups selected were considered to have an adequate knowledge of tax matters (compared to the general population) and as a group considered to have a vested interest in the tax system. Further, these two sub-groups were easily available to participate, through their respective professional bodies.

5.4 MODEL CONSTRUCTS AND MEASURES

The proposed research model is derived from an incremental study, in that the well-developed TPB is used as the underlying framework, with new measures, constructs and structural paths added to the model. Kirchler (2007) claims that past models used in tax compliance tend to utilise highly stylised analysis that fails to incorporate many facets of taxpayers' realities. The present model, therefore, incorporates a wider number of variables associated with tax compliance behaviour.

Although the TPB model was vigorously tested, most of the measures used for the current survey were newly developed for this study. These new measures are based on the theoretical and empirical literature in tax compliance, with some measures based on taxpayers' opinions and views. Accordingly, a number of these newly formed measures used in this study are not incorporated into the existing literature.[80]

5.4.1 Reflective and Formative Variables

An underlying assumption for SEM analysis is that all indicators used to measure a latent variable or construct should be reflective in nature (Chin, 1998a). However, in PLS, the constructs can either be modelled with reflective or formative indicators, or even with a

[79] Proxy taxpayers were used because the IRD was reluctant to assist with the survey.

[80] The Community Hopes, Fears and Action Survey (Braithwaite, 2001) also provided some general ideas for the construction of the survey instrument.

combination of both. The decision as to whether the indicators should be modelled as reflective or formative should be based on theoretical consideration (Gotz et al., 2010). Jarvis et al. (2003) provide four decision rules for determining whether a construct is reflective or formative, and suggest that these should be considered prior to data collection.

The first consideration is to determine the theoretical direction of causality between each construct and its measures. If the direction is from the constructs to the indicators, the construct is reflective (see Figure 5.1a). Conversely, if the direction is from the indicators to the construct, the construct is formative (see Figure 5.1b). The second involves examining the interchangeability of the measures. If the measures are interchangeable and have a common theme, they are considered to be reflective. Such measures should be uni-dimensional and reflect the common theme. In contrast, formative measures may not be interchangeable, and will often employ different themes. In addition, if one of the measures is removed, the meaning of the construct would be affected given that the construct is defined by these measures.

The third decision rule is to consider whether the measures covary with one another. Reflective measures are required to covary with one another and therefore internal consistency or reliability is important. This is to ensure that all items are measuring the same phenomenon or tap into the same concept. Furthermore, if any of the values for one of the measures changes, then all of the other values should move in the same direction. In terms of formative constructs, the measures need not covary nor should they have any strong correlations with one another. Although multicollinearity is required for reflective measures, excessive multicollinearity should be avoided for formative measures. The last consideration is to determine whether the measures of the constructs have the same antecedents and consequences. Reflective measures are interchangeable, and therefore have the same antecedents and consequences, because the measures are manifestations of the constructs. In contrast, formative constructs are composites that are made up of measures that may be very different and, as such, it may not be necessary for the measures to have the same antecedents and consequences.

Figure 5.1a.
Construct with Reflective Indicators

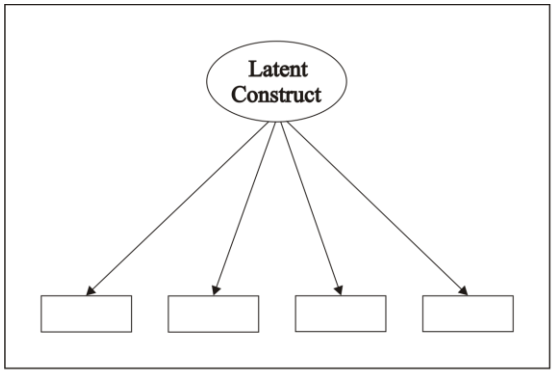
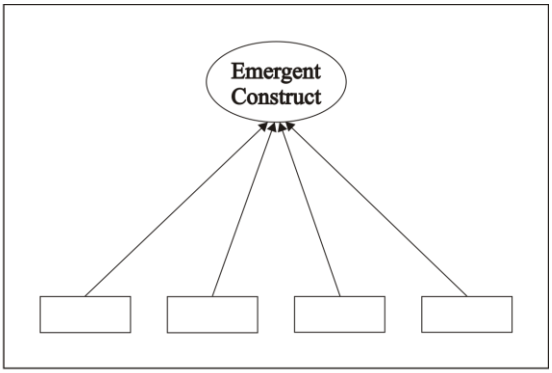


Figure 5.1b.
Construct with Formative Indicators



(Source: Chin, 2009)

The four indicators depicted in Figure 5.1a are a reflection of the construct and a change in the construct affects the underlying indicators. In contrast, the formative construct in Figure 5.1b is a composite of the four indicators depicted in that figure, and any changes in the measures cause change in the construct (Jarvis et al., 2003; and Petter et al., 2007). The above decision rules were applied during the development of the questionnaire to ensure that all measures developed are reflective.

5.4.2 Measurement Scales

The questionnaire comprised 119 items measuring 12 constructs. Most TPB variables used in the research model were measured on a 7-point Likert type optimal scale (Ajzen, 1991; 2002), in which belief strength and outcome evaluations were both scored in a unipolar mode from 1 to 7,[81] with higher numbers representing lower subjective probabilities and more unfavourable evaluations. Most of the other items were measured on a (positive-to-negative) 7-point Likert scale ranging from "*strongly agree*" to "*strongly disagree*", with "*neither agree nor disagree*" as a mid-point. Consistent with the TPB, all questions on behaviours and attitudes included the four specification elements considered important: the specific action(s) involved, the target at which the behaviour is directed, the specific context involved, and the unit of time involved (Fishbein & Ajzen, 1975). The questionnaire has attempted to include all four elements in each question in order to increase the accuracy of responses.

For measures of past behaviour, respondents were asked to indicate on a scale, ranging from 1 to 7, the number of times they have suppressed income; a "1" representing none and a "7" representing a frequency of more than 5 times. For measures of the amount of income

[81] The TPB does not prescribe to any one form of scaling, resulting in the use of either the unipolar scales (from 1 to 7), or scales scored in a bipolar mode (from -3 to +3).

reported, respondents were asked to select on a scale ranging from 1 to 7 the percentage of income they reported in their last tax return; a "1" representing 100 percent and a "7" representing 0 percent. The response scale for the hypothetical scenario ranged from 1 to 7, with a "1" indicating that respondents would be *extremely likely* to report the cash income, and a "7" indicating that they would be *extremely unlikely* to do so.

5.4.3 Construct Development

The proposed model for this study consists of 12 constructs. These are: Behaviour (*BEHV*); Behavioural Intent (*BI*); Attitude Towards the Behaviour, based on non-legal sanctions (*ATT1*); Attitude Towards the Behaviour, based on legal sanctions (*ATT2*); Subjective Norm (*SNORM*); Perceived Behavioural Control (*PBC*); the Tax System (*TXSY*); Justice Elements of the CPR (*CnP*); Effectiveness of the CPR (*CnPeff*); the Tax Authority (*TXAU*); Perceptions of Other Taxpayers or Societal Norm (*OTHERS*); and General Views or Social Distance (*DST*). Appendix 2 defines each construct and provides a list of all the indicators used for each construct. In addition, the empirical and theoretical studies underpinning these measures are discussed in Chapters 2 and 3, respectively.

The dependent constructs include measures based on a hypothetical tax scenario and self-reported behaviour. Self-report measures are considered biased by self-presentation concerns (Elffers, 1991);[82] however, other researchers have equally supported the use of self-reports especially when measuring beliefs and attitudes.

(a) The Research Model (based on the Theory of Planned Behaviour)

(i) Behaviour

Behaviour refers to respondents' self-reported past tax compliance behaviour. This dependent construct was assessed with two items: the frequency or number of times respondents did not fully disclose all their income during the past eight years; and by the amount of income not reported.[83] Thus the two items comprise both the number of times and the amount of income suppressed. This measure of self-reported past behaviour was used as a proxy for measuring behaviour in the research model since past behaviour is considered to reflect future behaviour (Titte, 1980; and Burnkrant and Page Jr., 1988). Furthermore, attitudes and beliefs which influence behaviour tend to remain quite stable over time (Ajzen,

[82] This study provides a comprehensive discussion on prior studies (Hessing et al., 1988; and Elffers et al., 1987) which examined the validity of survey responses.

[83] When the survey instrument was distributed the CPR was in operation for the last eight years, hence the use of an eight year period to capture tax compliance behaviour post CPR.

2010). Findings from New Zealand studies spanning over fourteen years, which examined individuals' attitudes towards tax noncompliance (as measured by their perceptions of the seriousness of tax offences), suggest that individuals' attitudes and beliefs have remained stable over time (Oxley, 1993; McIntosh & Veal, 2001; Birch et al., 2001; and Gupta, 2006; 2007).

(ii) Behavioural Intent

Behavioural intent refers to respondents' intention to comply (or not comply) with their tax obligations. This dependent construct was measured by two items. One item measured the response to a hypothetical question based on a tax scenario relating to the likelihood of respondents suppressing income. The second item measured respondents' willingness to pay the correct amount of tax. Collectively, these two questions measure respondents' behavioural intention to comply (or not to comply) with the tax laws.

(iii) Attitude Towards the Behaviour

A person's attitude towards performing a given behaviour is related to that person's beliefs that performing the behaviour will lead to certain consequences, and includes the person's evaluation of those consequences. This attitude is viewed as one key determinant of the person's intention to perform the behaviour in question (Fishbein & Ajzen, 1975). Attitude towards tax compliance behaviour therefore captures respondents' attitude towards complying (or not complying) with their tax obligations and their evaluations of these outcomes. Three questions were developed to measure the beliefs about the behaviour based on guilt feelings, civic duty and moral obligations,[84] and a further three questions to measure respondents' evaluations of these outcomes. Consistent with Ajzen and Fishbein (1980), the three composite measures of attitude were obtained using four evaluative semantic differential scales (for example, beneficial/harmful; good/bad; agree/disagree; important/unimportant). Thus the six items transformed into three composite indicators measure attitudes based on the non-legal deterrent effects of noncompliance with respondents' tax obligations.

A further set of questions were developed to measure beliefs and outcomes in relation to legal sanctions. Three questions were developed to measure beliefs, and another three to measure evaluations of these outcomes, based on the certainty of detection, certainty of punishment and severity of punishment. These six items were transformed into three

[84] Some researchers refer to these variables collectively as 'tax morale" (Kirchler, 2007; Torgler, 2007; and Kornhauser, 2007).

composite indicators used for measuring attitudes, based on the legal deterrent effects of noncompliance.

(iv) Perceived Behavioural Control

In the TPB Model, PBC refers to the degree of control individuals perceive they have in engaging in a particular behaviour. More specifically, control beliefs, the fundamental determinants of perceived behavioural control, refer to individuals' beliefs regarding the presence or absence of resources and opportunities, as well as the obstacles and impediments, to perform the specific behaviour in question. PBC measures used in the research model refer to the ease or difficulty of complying (or not complying) with respondents' tax obligations.

For the current research model PBC was assessed with six questions: three questions on *perceived control factor*s, and three questions on the *control belief power* or frequency of the presence of these factors. These indicators measured the impact of:

(1) third party reporting, and the frequency of income received subject to third party reporting;

(2) cash flow issues or financial distress, and the frequency of financial distress experienced; and

(3) opportunity present for underreporting income, plus the frequency of such opportunity, on tax paying decisions.

Consistent with Ajzen (1991), each composite measure is made up of factors that assist or hinder compliance (or encourage noncompliance), and the frequency of these factors. These six items formed the three PBC composite indicators.

(v) Subjective Norm

The normative component of the TPB deals with the influence of the social environment on intentions and behaviours. It refers to an individual's perception that important referents[85] would approve (or disapprove) certain behaviour, and the individual's motivation to conform to the expectation of important referents in order to achieve (or avoid) particular outcomes (Ajzen, 1991). A meta-analysis review provides evidence that subjective norms were the TPB component most weakly related to intention (Armitage & Conner, 2001). Therefore, the

[85] Based on the discussion provided in paragraph 3.3.4 the questions were based on the expectations and behaviour of respondents' most important referent(s).

traditional measures of the TPB model were replaced with six questions making up three newly created composite indicators measuring:

(1) respondents' perceptions of whether important referents would want them to comply, plus respondents' motivation to conform to the referents' expectations;

(2) whether important referents would themselves comply, plus respondents' motivation to want to behave in a similar manner to their important referents; and

(3) whether respondents believe that they will lose the respect of important referents if they do not comply, and respondents' motivation to maintain this respect.

Thus six items were developed: three to measure *normative beliefs*, and three for measuring *motivation to comply*. These are transformed into three composite indicators for the PBC construct.

In their respective aggregates, behavioural beliefs produce a positive or negative *attitude towards the behaviour*; normative beliefs result in perceived social pressure or *subjective norm*; and control beliefs give rise to *perceived behavioural control*. In combination, attitude towards the behaviour, subjective norm and perception of behavioural control, lead to the formation of a behavioural *intention*. Intentions in turn are considered to be the immediate antecedent of behaviour (Ajzen, 2002).

(b) Extension to the Research Model

Ajzen (1991) contends that a TPB behavioural model can be extended to include additional predictor constructs, if the additional constructs improve the predictive qualities of the model.[86] The initial research models which comprised elements of the TPB were therefore extended in an attempt to improve the predictive qualities of the research models. The following paragraphs present the additional constructs incorporated into the current research models, which capture additional determinants of tax compliance behaviour that could potentially influence behavioural intentions and behaviour.

(i) The Penalty System

Unfair penalties rules and unfair administration of the penalties rules will lead to procedural injustice. The construct for the penalty system refers to the procedural justice/injustice aspects of the Compliance and Penalties Regime (CPR). Procedural Justice

[86] To date, three studies on tax compliance research have applied an extended TPB Model (Bobek & Hatfield, 2003; Trivedi et al., 2005; and Saad, 2009; 2011).

rules were adapted in this study to examine respondents' perceptions of the application of the CPR by the tax authority, and its effect on attitude towards tax compliance. Eleven indicators capturing the justice elements of Leventhal's (1980) Procedural Justice Theory (PJT), which also include a number of indicators based on taxpayers' opinions, were developed to measure this construct (*CnP*). Another four indicators capturing the perceived effectiveness of the CPR (*CnPeff*) were also developed for the research models and a further five indicators to measure the perceived fairness of the CPR (CnPfrn).[87]

(ii) The Tax Authority

Taxpayers' favourable or unfavourable evaluation of the tax authority will influence their compliance behaviour (Torgler, 2007). Therefore, how the tax authority is viewed by taxpayers will have an influence on their tax compliance behaviour. This construct (*TXAU*) captures respondents' evaluation of the tax authority and is measured with eight indicators. Most of these indicators, broadly based on the Process Model of Regulation, were newly developed for this study.

(iii) Societal Norms (Others' Tax Compliance Behaviour)

Perceived prevalence and acceptance (or non-acceptance) of tax noncompliance among the general population (societal norms) will influence an individual's tax compliance behaviour (Welch et al., 2005; and Kornhauser, 2007). This construct (*OTHERS*) refers to respondents' perception about the compliance behaviour of the general population of taxpayers and is measured by ten indicators. The measures were adapted from Braithwaite (2001).

(iv) General Views (Motivational Postures or Social Distance)

Motivational postures depict the quality of the relationship between the tax authority and the taxpayers. Braithwaite (2003a; 2003b) identified four key motivational postures that taxpayers adopt in their relationship with the tax authority, and which describe the way taxpayers control the amount of social distance they place between themselves and the tax authority. This construct (*DST*) refers to the social distance between the tax authority and taxpayers, and is measured by twelve indicators measuring the four postures. All measures used were adapted from the instrument developed by Braithwaite (2003a).

[87] The fairness construct was eliminated during the item trimming process because most of the measures displayed low loadings (refer to paragraph 7.2.1 of Chapter 7).

(v) The Tax System

Whether the tax system is perceived to be fair or unfair has an influence on tax compliance behaviour. Cowell (1990) provides evidence which indicates that attitudes and perceptions of the tax system influence compliance behaviour. This construct (*TXSY*), measures respondents' views of the tax system and is measured by four indicators.

(c) Additional Analysis

A number of additional questions were included in the survey instrument, in order to undertake additional analysis. These items will not be included in the structural model but will be used for descriptive analysis. The additional analysis is necessary in order to gain a better understanding of the determinants that may influence tax compliance behaviour.

(i) Tax Noncompliers' Views

A number of questions were targeted at respondents previously subjected to the penalties regime. These measures or indicators were newly developed for this study, and attempt to measure respondents' experiences with the process prescribed by the CPR.

(ii) Perceptions of Tax Offences

To determine how respondents view tax noncompliance, as compared to other similar offences, is an important aspect of understanding taxpayers' compliance behaviour. The questionnaire used for this study was adapted from a previous New Zealand research by Gupta (2006), which replicated a United States study by Karlinsky et al. (2004). These studies examined taxpayers' perceptions of the severity or seriousness of tax evasion, relative to other crimes, including violent crimes. This study, on the other hand, will examine the perceived severity of tax noncompliance compared to other similar civil offences. Two questions were included to measure respondents' perception of the severity of noncompliance, relative to other similar civil offences. The first question required respondents to evaluate (or rate) the seriousness of each of the seven listed offences. Respondents were required to respond, on a 5-point Likert scale, ranging from *not serious* at 1 to *extremely serious* at 5. The second question attempts to capture respondents' perceived seriousness of tax noncompliance, relative to the perceived seriousness of the other six listed civil offences. Respondents were asked to rank the six offences from the most serious to the least serious. A further analysis will examine the relationship between perceptions of tax offences and tax compliance behaviour.

(iii) Demographic Variables

Demographic variables developed for this study include: age, gender, annual income, length of employment, main source of income, industry, educational level, professional memberships, type of tasks performed and the source of tax information. The TPB maintains that demographic characteristics have no direct effect on an individual's intentions or behaviour. External variables, such as demographic variables, are therefore considered often to be inaccurate predictors of specific behaviours, because of the lack of correspondence between overly general predictors and situationally specific behavioural measures (Ajzen & Fishbein, 1980).[88] The current study will therefore only use the demographic data collected to test the representativeness of the observed sample against the survey population. The data will also be used to examine the profiles of respondents in each sample group.

5.4.4 Questionnaire Development and Methodological Considerations

(a) Pre-Testing the Survey Instrument

In order to minimise concerns of response error bias, as it relates to problems in instrument design, a two-step process was adopted. First, the completed questionnaire was pre-tested by experts in the field of tax compliance research,[89] following a process recommended by Dillman (2000). All comments and errors identified were addressed and corrected.

The revised questionnaire was forwarded to 18 accounting and 21 engineering postgraduate students,[90] all from the University of Canterbury. The postgraduate students were asked to assess the ambiguity, readability, comprehensibility, the ease of completing the questionnaire, and to measure the time taken to complete the task. The exercise provided useful feedback, including suggestions for improving the questionnaire. The comments and suggestions received were incorporated into the modified questionnaire. The questionnaire was then re-submitted to the two academic experts for a final review. Once this was completed, the questionnaire for the mail survey was prepared for distribution.

In terms of the web-based questionnaire, these were forwarded to a number of volunteer testers from around New Zealand.[91] Problems encountered in the testing process were forwarded to the IT consultant who attempted to address these problems as they were

[88] Demographic variables have, nonetheless, been effectively used as mediating variables in prior studies (Hite, 1997; McKerchar, 2003a; and Devos, 2008).

[89] Experts included the senior supervisor, co-supervisor and selected members of the IRD.

[90] It was assumed that engineering students would have minimal knowledge of accounting and tax terms.

[91] Students, friends and IRD colleagues from various parts of New Zealand tested the questionnaire on their personal computers.

identified. Once these were resolved, the questionnaire was linked to the web-page set up for this study.

(b) Self-Reports

Self-reports are commonly used in data collection, and are widely used to measure individuals' subjective evaluations of their attitudes, beliefs, feelings, experiences and behaviours. Self-reports are an effective way to obtain information that cannot be observed or obtained objectively.

Hite (1988) argues that most survey results based on self-reports suffer from biases due to a number of factors. These may include respondents misunderstanding the questions, not remembering the information requested, not having any cognisance of the issue, concealing information or even deliberately giving misleading or untruthful answers (Hite, 1988; Neuman, 2006; and Fowler, 2009).

A number of studies have provided support for the accuracy of self-reports (Clark & Tifft, 1966; Tittle & Hill, 1967; Cahalan, 1968; Clausen, 1968; and Sheffrin & Triest, 1992); other evidence suggest self-reports to be imperfect representations of actual behaviours (Goddard et al., 1961; Cannell & Fowler, 1967; Manfredo & Shelby, 1987; and Elffers et al., 1992). The findings to date are still inconclusive.

Despite this, a literature review undertaken by Tittle (1980) indicated that self-reports are generally 80 to 90 percent accurate. A later study by Elffers et al. (1987) compared self-reports of evaders and non-evaders with government data; however, no significant correlation was found between the self-reported and government data. Elffers et al. (1987) found that some compliers admitted to noncompliant behaviour, whereas some noncompliers deny underreporting their income. The authors attribute this outcome to the fact that government statistics tend to underrepresent offences, however, the authors were also unable to explain why tax evaders would deny their past noncompliant behaviour. Perhaps this outcome could be attributed to the fact that the interviews were conducted personally. Surveys conducted in person or over the telephone are more likely to receive less truthful responses compared to self-administered mail or web-based surveys (Neuman, 2006). This may suggest the existence of self-presentation bias in Elffers et al.'s (1987) study. Another view attributes this to the differences of opinion between auditors and taxpayers, explaining that in the Tax Compliance Measurement Program (TCMP) audits, a significant proportion of taxpayers made mistakes that overstate their taxable income (Kinsey, 1988). Conversely, auditors may also not detect

unreported income, which would also result in a discrepancy between auditor views and self-reports (Sheffrin & Triest, 1992).

A key concern with tax compliance research is that, due to rights of privacy, the accuracy of most taxpayer survey data cannot be directly established. Therefore, despite the shortcomings associated with self-reports, this method of data collection is the best alternative for collecting sensitive and personal data, such as individual's tax compliance data.

(c) Method Bias

Method bias, also known as "methods halo" or "methods effects" may occur when data is collected via only one method (Campbell & Fiske, 1959) or via the same method but only at one point in time (Marsh & Hocevar, 1988). Arguably, the problem may occur when items measuring a particular constructs are placed together, which could influence respondents to give a similar response to these items (Straub et al., 2004). Issues could also arise when the wording of a survey question influences respondents to give a particular response.

Straub et al. (2004) are critical of instruments which lack random ordering, arguing that the extremely high Cronbach alphas, in the upper .90 range found throughout the TAM research stream may be attributed to the non-random ordering of items in the survey instrument.[92] Further, Straub et al. (2004) suggest that Cronbachs of greater than .95 in some studies are highly suspicious for this reason.

The current study involved collecting data via the self-administered survey only, and the survey data was collected at one point in time, and therefore may be susceptible to method bias. Hence, steps were taken during the development of the questionnaire to ensure that any potential effects from method bias are minimised. Dillman's (1978; 2000) *tailored design method* was adopted in the development of the questionnaire. This approach included randomly ordering non-TPB questions, and reviewing each question to ensure they are not likely to influence any of the other responses.[93]

(d) Ethical Issues

The key concerns with behavioural surveys, which are likely to contain personal and sensitive questions, relate to anonymity of respondents, the safeguard of the data gathered and the unlawful use of the data. All University of Canterbury research students dealing with

[92] TAM refers to the areas of study involving the Technology Acceptance Model.

[93] It was necessary to place some TPB questions together, especially those multiple questions measuring a composite variable (Ajzen, 2002).

human subjects are required to obtain prior approval from the Human Ethics Committee before proceeding with the research (refer to Appendix 1 for letter of approval). This is to ensure that researchers will conduct their research with appropriate regard to ethical principles. An application was lodged with the Human Ethics Committee outlining the objectives of the research, the steps taken to ensure the anonymity of respondents, and the proposed use and storage of the data. The covering letter to respondents informed respondents that ethical clearance was given by the Human Ethics Committee to undertake the research (refer to Appendix 4).

(e) Survey Distribution

(i) Mail Survey

The survey package contained a copy of the survey instrument, a covering letter explaining the nature of the research and soliciting their participation, a form requesting a summary of findings and two prepaid self-addressed envelopes.[94] In addition, a small token of appreciation in the form of a tea-bag,[95] was included with a note thanking the recipient for their participation. These were mailed out to the 1,000 subjects randomly selected from the New Zealand Electoral Roll. A wide body of literature suggests multiple follow-ups in order to increase the response rate of mail surveys (Dillman, 1978; Schaefer & Dillman, 1998; and Dillman, 2000). However, this would considerably increase the cost of the study and the author decided instead on only one complete follow-up.[96]

(ii) Web-Based Survey

The link to the web-based survey, together with an electronic copy of the cover letter, was forwarded by the Information Technology Department of the University of Canterbury from the University's website. Prior notice was given to NZICA and NZLS of the survey. On receiving the link and copy of the letter, NZICA emailed the link and letter to 1,000 of its members who were randomly selected from the NZICA membership database that contains email addresses. The letter reassured all respondents' complete anonymity and explained that their responses could not be linked to them individually or to their organisation.

[94] To assure respondents of anonymity, one envelope was for mailing back the completed questionnaire, while the other was for posting the request form for a copy of the summary of findings.

[95] Studies have documented that the inclusion of a premium (token) improves response rates, although some critics have argued that it may also induce a response bias. Whitmore (1996) found that small non-monetary tokens do not lead to any premium inclusion bias or any systematic bias.

[96] Steps taken to safeguard the anonymity of respondents meant that non-respondents could not be identified. The follow-up to taxpayers therefore included everyone on the list.

A similar process was adopted for NZLS. However, NZLS's membership database revealed that only 266 of its members spend more than 50 percent of their time on tax work. The electronic letter and the link to the survey were forwarded to those members previously identified. No follow-up reminders were issued to selected members, as a result of both organisations' policy on unsolicited emails. The NZLS, however, inserted a reminder in their membership newsletter, which did not result in any additional responses.

5.5 ANALYTICAL METHODOLOGY

This section presents the methodology employed to analyse the data obtained from the surveys. The first part includes a description of the approach taken to screen and prepare the data, in order to ensure the quality of the data collected. The second part provides an introduction and a discussion on the Structural Equation Modelling (SEM) methodology used, in particular the Partial Least Squares (PLS-Graph) approach, which was used to test the validity and reliability of the data and the hypotheses established in the previous chapter.

5.5.1 Data Preparation and Preliminary Analysis

(a) Data Screening

One of the most salient issues to consider before using the data collected from a survey is to ensure that the data accurately reflects the responses made, that the data has been correctly coded and entered, patterns in missing data points are ascertained, unusual or extreme responses are identified, and ensuring the data meets statistical assumptions that underlie the methods used to analyse the data (Meyers et al., 2006).

The data from the web-based surveys (NZICA and NZLS) was received electronically from respondents by the Information Technology Department of the University of Canterbury, and transferred into a spreadsheet and forwarded to the author. As such, it was envisaged that the data would be free of coding errors. Data from the mail survey was entered into a spreadsheet and each entry was manually checked against the survey instrument in an attempt to minimise any coding errors made during the transfer.

The data-sets were also examined to determine whether there were any non-random patterns in the missing data points, such as a concentration of missing data points in a specific set of questions. Any non-randomness patterns in the missing data points require a closer inspection (Hair et al., 2006). A visual check revealed that the missing data points were randomly distributed. A more robust analysis, Little's Missing Completely At Random (MCAR) test, which is available in Statistical Package for the Social Sciences (SPSS), was

also applied to the data-sets. This test determines whether the missing data points are missing completely at random, or whether there are any non-random patterns in the missing data points. The MCAR test will therefore ensure that the observed values of Y are a truly random sample of all Y values, with no underlying process that lends bias to the observed data (Little & Rubin, 1987; Allison, 2001; Little & Rubin, 2002; and Hair et al., 2006).

Next the percentage of variables with missing data points for each case was tabulated, followed by the tabulation of the number of cases with missing data points for each variable (Hair et al., 2006). This process will not only identify the extent of missing data points, but any exceptionally high levels of missing data points that occur for individual cases or observations. Cases with more than 10 percent of missing data points, or variables with more than 10 percent of missing data points were eliminated (Hair et al., 2006). However, missing data points from optional questions were not considered to be missing. In addition, a few respondents had (via separate email) indicated that they may have unintentionally skipped a page, and in such instances these cases are included in the study.[97] A final review undertaken on the missing data points indicated that the remaining missing data points were not significant or were below the threshold to warrant any further additional diagnosis (Hair et al., 2006).

(b) Response Bias Analysis

(i) Nonresponse Bias (Levene's t-Test)

In order to make valid statistical generalisation, it is necessary to consider whether 'nonresponse' bias is present in the survey data (Brehm, 1993; Dillman, 2000; and Ziegler, 2006). Nonresponse bias is associated with systematic differences in some key areas between respondents and non-respondents. Testing for nonresponse bias establishes whether, if non-respondents had responded, the outcomes of the survey would have been significantly different. While there are a variety of methods to test for nonresponse bias, the two most common approaches are to test the difference in outcome between early and late responses, and to compare the characteristics of the sample to the population (Leong, 1980; and Sheik & Marringly, 1981). Other researchers have suggested contacting a sample of non-respondents and comparing the results from the non-respondents (Johnson, 1959; Miller & Smith, 1983; and Collier & Bienstock, 2007).

[97] Unfortunately, the web-based survey did not have any features preventing respondents who did not complete all questions from moving onto the next page. Although some electronic packages (for example, the Survey Monkey and Qualtrics) offer a feature that guarantees complete survey responses in all compulsory fields, this was not adopted for a number of reasons.

Arguably, the last approach appears more empirically sound than the first two approaches; however, this option is not always feasible (Collier & Bienstock, 2007). Due to the nature of the current survey, it would be extremely difficult, if not impossible, to attempt to contact non-respondents. A recent study which analysed 535 articles over a five year period claims that the second most empirically sound method for assessing nonresponse was to extrapolate early and late respondents on both the variables of the study as well as demographic variables (Collier & Bienstock, 2007). In the current study, the extrapolation of early and late respondents (used as proxy non-respondents), on both study variables and also on demographic variables, will provide some assurance that respondents and non-respondents in the sample selected for this study do not differ in sample characteristics, or in their opinions and their attitudes that are the specific inquiry of this study. Consistent with Armstrong and Overton (1977) the current study compared the first 25 percent to the last 25 percent of the sample, with the last 25 percent of respondents representing non-respondents.

The independent *t*-test, which is available in SPSS, was employed to test whether the means of the two independent groups (early and late respondents) are similar or whether they differ (Gaur & Gaur, 2006; and Pallant, 2011). The null hypothesis for the *t*-test is that there is no difference in the responses of the early respondents and late respondents (Hinton et al., 2004). The significance (or non-significance) of the test statistics (*F*) will determine which values to use.[98] If the *t*-test result (of the selected value) shows *t* statistic of $p = < 0.05$, then the null hypothesis should be rejected. However, if the *p*-value is greater than 0.05, the null hypothesis cannot be rejected, indicating that the responses of the two groups are similar.

(ii) Representativeness of Observed Samples

Samples are measured in order to make generalisations about the target population (Tabachnick & Fidell, 2007). In order for the results to have generalisability, it is important that the sample reflects the true population. Due to the nature of surveys, it is extremely difficult to generate a sample that is representative of the population. In this study, a selected number of the demographic and economic characteristics of the sample were compared to data available for the true population, in order to determine whether the sample reflects the population distribution. The selected attributes are: gender, age, income level, income source, and educational attainment.

[98] A significant *F*-test statistic indicates that the *equal variance not assumed* value should be used. Conversely, if the *F*-test statistic is not significant, the *equal variance assumed* value should be used.

Selected attributes of the Taxpayer sample were compared to that of the New Zealand population obtained from Statistics New Zealand's website.[99] The Tax Agent sample's attributes were compared to information available from the NZICA's 2006 Annual Report while information on remuneration was sourced from published results from the remuneration survey undertaken in the 2007 year.[100] The Tax Lawyer or NZLS sample was removed from this study due to the low number of responses (37 responses) received and no further analysis was undertaken for this sample group.

(c) Estimation Technique for Missing Data

Most statistical packages, including PLS, require complete data sets and as such datasets with missing data must be remedied before they can be used. Arguably, the traditional approaches may cause problems and Hair et al. (2006) suggest a model-based approach where missing data is imputed based on all available data for a given respondent. One such method highly recommended is the Expectation Maximisation (EM) approach available in SPSS, which estimates the values of each mean and covariance as if there is no missing data. The EM method uses a maximum likelihood approach for estimating missing values (Little & Rubin, 2002). The EM algorithm is a two-step iterative process, with the first step using regression analysis to estimate the missing values. The next step involves applying maximum likelihood procedures to make estimates of parameters (for example, correlations) using the missing data replacements (Meyers et al., 2006).

Advantages of the EM method include fewer problems with convergence and less bias under conditions of random missing data. The only known disadvantage noted is that the effective sample size is uncertain for EM. Arguably, when the sample size exceeds 250 and the total amount of missing data is below 10 percent, it is acceptable to use the pair-wise approach. However, when the sample size is small and when the amount of missing data is large, then the model-based EM or ML becomes superior (Hair et al., 2006). In the present study, due to the smaller sample size, the EM imputation approach was used to address the remaining missing data.

(d) Descriptive Statistics

In addition to inferential statistical techniques, descriptive statistics are also an important feature in most empirical studies, as they provide a simple summary of the survey data and

[99] Data downloaded from www.stats.govt.nz/census/Census2006HomePage.aspx.

[100] NZICA's 2006 Annual Report was retrieved from: http://www.nzica.com.The results of the remuneration survey conducted for the 2007 year was obtained from NZICA's website at http://www.institutesurvey.co.nz/2008/2007results.asp.

they also form the basis of quantitative analysis of data. Tabachnick and Fidell (2007) argue that describing and making inferences about a data set are equally important for empirical research. Therefore, prior to undertaking any further analysis, demographic data collected from the survey will be used to develop a profile of the sample population; and the descriptive statistics computed for selected indicators and constructs in the research model will provide a preliminary view of the raw data and explain the underlying information. This involves computing the means, standard deviation and frequency for each selected variable.

5.5.2 Introduction to Structural Equation Modelling

The hypotheses established for this study were tested using the Structural Equation Modelling (SEM) methodology, and in particular, the Partial Least Squares (PLS) approach. SEM is a relatively new approach for assessing multivariate models with empirical data and was developed by Joreskog in the 1970s (Chin, 1998b). One reason for the increased use of SEM among researchers is the ability to simultaneously examine theory and measures (Chin & Newsted, 1999).

SEM, a second generation multivariate analysis tool (Bagozzi & Fornell, 1982), incorporates an economic perspective focused on prediction and a psychometric approach that models concepts as latent variables that are indirectly inferred from multiple observed measures (Barroso et al., 2010).[101] This approach allows researchers (Fornell, 1982; Chin, 1998a; and Haenlein & Kaplan, 2004) to:

(1) explicitly model measurement error for observed variables;

(2) incorporate abstract and unobservable constructs (latent variables) measured by indicators;

(3) simultaneously model relationships among multiple predictor and criterion variables; and

(4) combine and test *a priori* knowledge and hypotheses with empirical data.

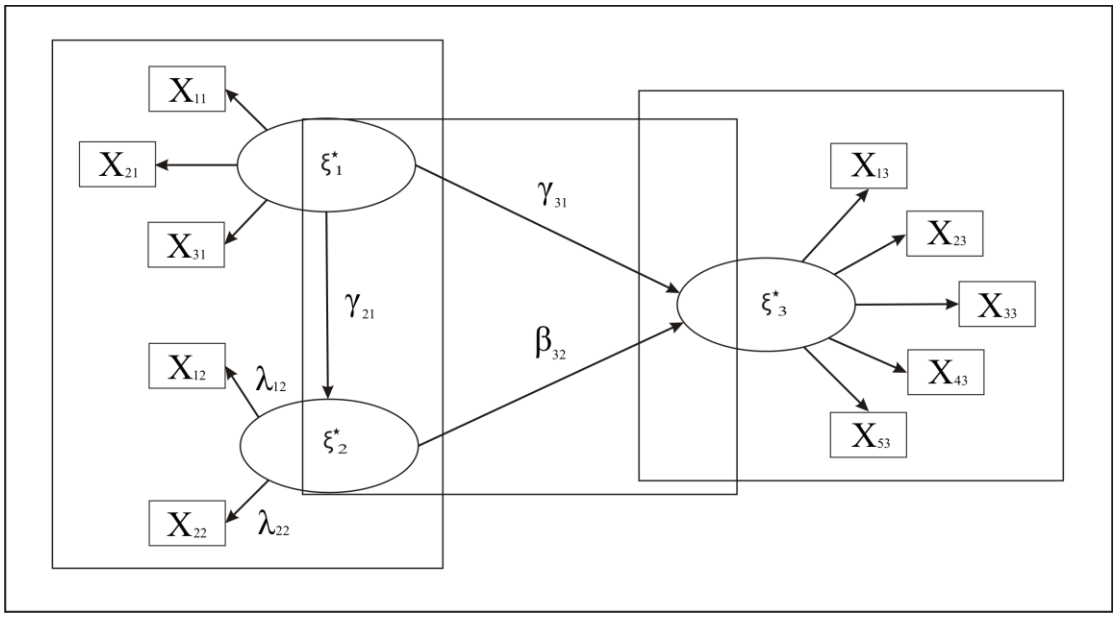
There are two stages to the SEM analysis: the measurement model, and a structural model assessment (Hair et al., 2006; and Barroso et al., 2010).[102] The measurement model linking observed variables to their associated constructs is assessed by examining whether the theoretical constructs are correctly measured by the manifest variables (indicators), with

[101] Latent variables are also commonly referred to as *constructs*, *unobserved variables* or *factors* and measures are also commonly referred to as *indicators*, *manifest variables* or *items*.

[102] An illustration of the relationship between the measurement model and the structural model is presented in Figure 5.2.

reference to reliability and validity attributes. In contrast, the structural model linking the constructs is assessed according to the meaningfulness and significance of the hypothesised relationships between the constructs (Barroso et al., 2010). The following Figure 5.2 demonstrates these concepts. The latent variable ξ_1^* can be described as an unobserved variable implied by the covariance among the measured block of indicators x_{11}, x_{21} and x_{31}. Likewise, latent variables ξ_2^* and ξ_3^* are measured by their associated observed measures,[103] and together the three latent variables and their associated indicators represent three measurement models. The structural model represented in the middle square prescribes the relations among the latent variables (ξ_1^*, ξ_2^* and ξ_3^*). In other words, each latent variable (or circle) represents a construct, and each indicator (small boxes) represents a measure (or manifest variable measuring its associated construct), while the arrows between the latent variables (between the circles) represent the path coefficients measuring the relationships between these constructs. Details of the measurement and structural models are discussed in section 5.5.3.

Figure 5.2: Measurement and Structural Models
(Reproduced from Chin, 2009)



SEM enables the evaluation of the measurement and structural models in a single systematic and comprehensive analysis (Gefen et al., 2000; and Barroso et al., 2010). This combined analysis of the measurement and structural model allows measurement errors of the observed variables to be analysed as an integral part of the model and factor analysis to be combined in one operation with the hypotheses testing (Gefen et al., 2000).

[103] The measures (or indicators) for the latent variable ξ_2^* are x_{12} and x_{22} and for the latent variable ξ_3^* include x_{13}, x_{23}, x_{33}, x_{43}, and x_{53}).

Equally important is SEM's ability to express complex variable relationships through hierarchical or non-hierarchical, and recursive or non-recursive structural equations to present a more complete picture of the entire model (Hanushek & Jackson, 1977; Bullock et al., 1994; Gefen et al., 2000; and Barroso et al., 2010). These complex causal networks enabled by SEM characterise real world processes better than simple correlation-based models. Therefore, SEM is more suited for the mathematical modelling of complex processes to serve both theory (Bollen, 1989) and practice (Dubin, 1976; Gefen et al., 2000; and Barroso et al., 2010).

The two common but distinct statistical techniques of SEM are the covariance-based SEM (Joreskog, 1973; Bollen, 1989; and Rigdon, 1998) and PLS which is a component or variance-based method (Wold, 1980a; 1982; 1985). These two techniques differ in the objectives of their analyses, the statistical assumption on which they are based, and the nature of the fit statistics each produce (Barroso et al., 2010). This is further discussed in the section that follows.

(a) Covariance-Based Structural Equation Modelling and Partial Least Squares Techniques

Advances in causal modelling which enable researchers to simultaneously study theory and measures have increased significantly. However, despite the increased use of SEM, most readers and reviewers of research articles are still more familiar with the Covariance-Based Structural Equation Model (CBSEM) methods than the PLS approach (Barrosa et al., 2010; Gotz et al., 2010; and Chin, 2010). The increasing interest in SEM analysis, especially among social science researchers, creates the need for making comparisons between various SEM techniques (Chin, 2010). Chin (2010) further contends that researchers using PLS path analyses are obliged to provide some initial discussion as to the rationale for applying the PLS method. This section will therefore include a comparison of the attributes, underlying assumptions and limitations of the CBSEM and PLS methods, and a discussion on the rationale for employing the PLS approach (as opposed to the CBSEM method).

The CBSEM and PLS approaches to data analyses are quite distinct in that each of these methods differ in terms of their objectives, statistical assumptions and the nature of the fit statistics they produce (Gefen et al., 2000; Barroso et al., 2010; and Turkyilmaz et al., 2010).

(i) Objective/Approach

The objectives of CBSEM and PLS are quite distinct. Whereas CBSEM aims to estimate the parameters of the model (for example, the loadings and path values) in order to minimise

the difference between the sample covariance and those predicted by the theoretical model (Barroso et al., 2010), PLS on the other hand focuses on the prediction of the dependent variables (both latent and manifest) by maximising the explained variance (R^2) of the dependent variables.

Therefore, while the parameter estimation process of CBSEM tries to reproduce the covariance matrix of the observed measures' overall goodness of fit (Chin and Newsted, 1999) to see how well the hypothesised model fits the data (Barclay et al., 1995), the parameter estimates for PLS are obtained based on the ability to minimise the residual variances for dependent variables. PLS is therefore more suited than CBSEM for predictive applications and theory building (exploratory analysis), although PLS can also be used for theory confirmation (confirmatory analysis) (Barroso et al., 2010).

(ii) Assumptions

Whereas a CBSEM approach rests on the assumptions of a specific multivariate distribution and independence of observations, the PLS approach does not make these hard assumptions. Instead, PLS uses very general, soft distributional assumptions, which often lead to this approach being termed 'soft modelling' (Wold, 1980b; and Chin, 2010). Although the mathematical and statistical procedures are rigorous and robust (Wold, 1980a), the mathematical model is 'soft' in the sense that it makes no measurement, distributional or sample size assumptions (Barroso et al., 2010). CBSEM is only efficient and unbiased when the assumption of multivariate normality is met (Gotz et al., 2010).

(iii) Parameter Estimates

As a full information approach, model misspecification can have a significant impact on the estimates obtained throughout the CBSEM model (Chin, 2010).[104] In contrast, the limited estimation procedure of PLS (whereby estimates are limited to the immediate blocks a particular construct is structurally connected to), means that misspecification in one part of a model will have less influence on the parameter estimates in other parts of the model.

(iv) Latent Variable Scores

In contrast to CBSEM, PLS avoids problems associated with inadmissible solutions and factor indeterminacy (Fornell & Bookstein, 1982; and Chin & Newsted, 1999). This is

[104] For example, adding an item that does not belong to a particular construct can impact estimates obtained throughout the model.

because the constructs in CBSEM are modelled as indeterminate while in PLS the constructs are modelled as determinate.[105]

(v) Epistemic Relationship between a Latent Variable and its Measures

In terms of epistemic relationships, CBSEM was designed to operate with reflective indicators (Fornell, 1982), and any attempts to include formative indicators in the model could lead to identification problems, implied covariance of zero among indicators, and/or the existence of equivalent models (MacCullum & Browne, 1993).[106] In contrast, PLS allows working with both formative and reflective indicators (Fornell & Bookstein, 1982).

(vi) Model Complexity

PLS models have the capacity to handle very complex models, with a high number of constructs, indicators and relationships. In contrast, CBSEM runs into difficulties handling larger models with 50 or more items (Barclay et al., 1995; Chin & Newsted, 1999; and Chin, 2010).

(vii) Implication

CBSEM is considered to provide optimal estimates of the model parameters, and is ideal for model confirmation and estimation of the "true" underlying population parameters. The PLS approach on the other hand is arguably more suitable for prediction accuracy (Chin & Newsted, 1999).

(viii) Sample Size

The sample size requirement for CBSEM ranges from between 200 to 800. In comparison, PLS's sample size requirement for complex models is smaller, ranging from 30 to 100 cases (Chin & Newsted, 1999). In addition, the sample size for PLS can be small relative to the complexity of the model (Chin, 2010).

In terms of the directional relationship among constructs, CBSEM allows for both recursive (unidirectional) and nonrecursive (bidirectional) relationships. In contrast, PLS currently only works with recursive relationships (Barroso et al., 2010).

[105] A determinate construct is a composite of its indicators. An indeterminate construct is a composite of its indicators plus an error term (Fornell, 1982, p.5).

[106] An epistemic relationship describes the link between theory and data (Barroso et al., 2010, p. 431).

Despite the differences identified above, Wold (1985) suggested that both CBSEM and PLS should be considered as complementary rather than competitive methods, both having rigorous rationale of their own. A summary of the key differences discussed above is presented in Table 5.1.

Table 5.1: Comparison between PLS and CBSEM Methodology
(Reproduced from Chin and Newsted, 1999, p.314)

Criterion	PLS	CBSEM
Objective	Prediction oriented	Parameter oriented
Approach	Variance based	Covariance based
Assumptions	Prediction specification (nonparametric)	Typically multivariate normal distribution and independent observations (parametric)
Parameter estimates	Consistent as indicators and sample size increase (for example, consistency at large)	Consistent
Latent variables scores	Explicitly estimated	Indeterminate
Epistemic relationship between a latent variable and its measures	Can be modelled in either formative or reflective mode	Typically only with reflective indicators
Implications	Optimal for prediction accuracy	Optimal for parameter accuracy
Model complexity	Large complexity (e.g., 100 constructs and 1000 indicators)	Small to modest complexity (e.g., less than 100 indicators)
Sample size requirements	Power analysis based on the portion of the model with the largest number of predictors - minimal recommendations range from 30 to 100 cases	Ideally based on power analysis of specific model – minimal recommendations range from 200 to 800

(b) Reasons for Using PLS-Graph

The discussion in the previous section clearly demonstrates the advantages of employing the PLS approach for this study. The main objective of this study is to predict tax compliance behaviour using the PLS approach, which is prediction oriented, and offers better prediction capability. As an incremental study which builds on prior theory by developing new measures and structural paths, the PLS approach with its limited estimation procedure (whereby estimates are limited to the immediate blocks a particular construct is structurally connected to), offers better protection against model misspecification. Any misspecification in one part of the model would have less influence on the parameter estimates in other parts of the model. Equally important is the fact that the sample size from the survey is relatively small (under

200 cases), which is not considered suitable for the CBSEM method, which requires over 200 cases. PLS, with its minimal recommendation range of 30 to 100 cases, and its soft distributional assumptions, is considered suitable for this study. Another reason for selecting PLS is the ease of model specification and reduction in complexity regarding model identification. The PLS-Graph Version 3 used for this study is a relatively easy tool to use. Finally, the PLS approach has rarely been applied in tax compliance behaviour, and one of the objectives of this study is to use PLS to test the tax compliance model and in the process prove that PLS can be successfully used in tax compliance studies. The next section sets out the process adopted in evaluating the PLS model.

5.5.3 Model Evaluation

The two steps in evaluating the PLS model involve assessing the measurement model (also referred to as the outer model), which relates the indicators to their associated latent variables, and the structural model (also referred to as the inner model), which relates endogenous latent variables to other latent variables (Hair et al., 2006). In assessing a PLS model, the traditional parametric-based techniques for testing significance would be inappropriate on the basis that PLS makes no distributional assumption, other than predictor specification (Chin, 1998b). Therefore, tests consistent with the distribution-free predictive approach of PLS should be adopted (Wold, 1980a; 1982). Consequently, the PLS model was evaluated using prediction-oriented measures that are nonparametric, including various techniques suggested by Chin (1998b).

(a) Evaluating the Measurement Model

The aim of assessing the measurement model is to test the reliability and validity of the model, which is accomplished by examining two elements of factorial validity: convergent and discriminate validity (Churchill, 1979; and Gerbing & Anderson, 1988). Validity tests are performed to ensure that the measures perform adequately, by illustrating how well the measurement items relate to the constructs (Gefen & Straub, 2005). When factorial validity is satisfied, it means each measurement item correlates strongly with the one construct it is related to, while correlating weakly or not significantly with all other constructs. The literature provides several criteria for validating reflective constructs (Chin, 1998b; Gefen & Straub, 2005; Barroso et al., 2010; and Gotz et al., 2010) which includes: indicator reliability, construct reliability, convergent validity and discriminant validity. All these measures are generated by the bootstrapping procedures of PLS-Graph Version 3.

(i) Indicator Reliability

The reliability of individual indicators or measures is evaluated by examining the loadings, or correlations, of the indicators with their respective latent variables (Hulland, 1999; and Barroso et al., 2010). A commonly accepted threshold is to accept items with loadings of 0.707 or more, which implies that there is more shared variance between the constructs and its measures, than error variance (Chin, 1998a; Hulland, 1999; Barroso et al., 2010; and Gotz et al., 2010). Arguably, it is equally common to have several items in an estimated model displaying loadings of below 0.707, particularly when new items for newly developed scales are employed (Hulland, 1999; and Chin, 2010).

Chin (1998b), however, cautions against eliminating measures with low loadings in cases where the measures are important to the construct. Chin (2010) advises that the only time to remove measures with low loadings is if these measures are influenced by additional factors, such as a method effect or some other concept. Unlike covariance-based SEM, where including additional poor indicators will lead to a worse fit; in PLS the inclusion of poor indicators will help to extract what useful information is available in the indicator to create a better construct score (Barroso et al., 2010). Given that PLS works with determinate constructs, poor indicators are factored in by lower weights (Barroso et al., 2010). Therefore, keeping items with low loadings may still increase predictiveness since the PLS algorithm will still weigh it to the extent it helps minimise residual variance, as long as other more reliable indicators exist (Chin, 2010).

(ii) Construct Reliability

The construct reliability assessment allows the evaluation of the degree to which a variable, or a set of variables, is consistent in what it intends to measure (Straub et al., 2004). Construct reliability is established by examining the composite reliability which is a measure of internal consistency developed by Werts et al. (1974), and applicable to latent variables with reflective indicators (Chin, 1998b). Therefore, the internal consistency for a given block of reflective measures can be evaluated by calculating the composite reliability (Werts et al., 1974), which can be generated through the bootstrapping resampling procedure. Composite reliability is defined as follows:

$$\rho_{\mathrm{c}} = \frac{(\Sigma\lambda_i)^2 \ \mathrm{var}\, F}{(\Sigma\lambda_i)^2 \mathrm{var}\, F + \Sigma\Theta_{ii}}$$

where λ_i, F and Θ_{ii} are the factor loading, factor variance, and unique/error variance respectively. If F is set at 1, then Θ_{ii} is the 1-square of λ_i.

Although this measure is similar to Cronbach's alpha, it does not assume that all indicators are equally weighted (Chin, 1998b). Values larger than 0.6 are considered to be acceptable (Bagozzi & Yi, 1988).

(iii) Convergent Validity

The Average Variance Extracted (AVE) is commonly used to measure convergent validity for reflective measures (Fornell & Larcker, 1981; and Gotz et al., 2010). The AVE attempts to measure the amount of variance that a latent variable captures from its indicators, relative to the amount due to measurement error (Chin, 1998b). Arguably, this ratio is more conservative than composite reliability and is only applicable to constructs with reflective indicators. AVE is calculated as follows:

$$AVE = \frac{\left(\Sigma \lambda_i{}^2\right) \text{var } F}{\left(\Sigma \lambda_i{}^2\right) \text{var } F + \Sigma \Theta_{ii}}$$

where λ_i, F and Θ_{ii} are the factor loading, factor variance, and unique/error variance respectively. If F is set at 1, then Θ_{ii} is the 1-square of λ_i.

AVE values should be greater than 0.50, demonstrating that 50 percent or more of the indicator variance should be accounted for (Bagozzi & Yi, 1988; Chin, 1998b; Chin & Dibbern, 2010; and Barroso et al., 2010).

(iv) Discriminant Validity (Cross Loadings and Squared Average Variance Extracted)

Discriminant validity demonstrates the extent to which a given construct differs from other constructs (Barroso et al., 2010). Discriminant validity is established when each measurement item correlates weakly with all other constructs except for the one to which it is theoretically associated (Gefen & Straub, 2005). Discriminant validity is assessed in two ways: the first is by examining how each item relates to the latent constructs (cross loadings), and the second is by comparing the square root of the AVE values with the correlations among constructs.

Cross loadings measures are derived by correlating the component scores of each latent variable with both their respective block of indicators and all other items included in the model (Chin, 1998b). Correlation of the latent variable scores with the measurement items have to show an appropriate pattern of loadings, one where the measurement items load highly on their theoretically assigned construct and not highly on other factors (Gefen &

Straub, 2005). Currently there is no widely accepted threshold to establish discriminant validity; however, it is commonly accepted that all loadings of the measurement items on their assigned latent variables should be larger than any other loadings (Gefen & Straub, 2005). Chin (1998b) further notes that any indicator that loads higher with other latent variables than the one it is intended to measure should be considered for elimination.

Square Root of Average Variance Extracted is another approach for establishing discriminant validity (Fornell & Larcker, 1981). In theory, the AVE test claims that the correlation of the latent variable with its measurement items should be larger than its correlation with the other latent variables (Gefen & Straub, 2005), and should be at least 0.50 (Fornell & Larcker, 1981).

(b) Evaluating the Structural Model

The main aim of evaluating the structural model is to test for the model's predictive power and the stability of the estimates. Given the unsuitability of traditional parametric-based techniques for evaluating PLS models, non-parametric prediction-oriented measures are needed. This includes applying the R^2 measures to predict the power of the endogenous constructs and examining the effect size f^2 to assess whether a predictor variable has a significant influence on the dependent variable. In addition, the global goodness of fit index was used to evaluate the overall fit of the model.

(i) R-square (R^2)

The R^2 values for each dependent (endogenous) construct in the PLS model represent the amount of variance in the endogenous construct that is explained by the model. The R^2 values generated by PLS are equivalent to the R^2 values derived from traditional regression analysis. R^2 is a normalised term that can assume values between 0 and 1. Arguably, there are no guidelines to determine the acceptable threshold value of R^2. To determine whether this determination coefficient is deemed acceptable or not depends on the individual study. However, the larger R^2 is, the larger the percentage of variance explained.

The effect size, f^2, is used to assess whether a predictor variable has a significant influence on the dependent variable. The f^2 value represents the change in R^2 in the dependent variable when a predictor latent variable is used or omitted in the structural equation. The effect size f^2 is calculated as follows:

$$f^2 = \frac{{R^2}_{included} - {R^2}_{excluded}}{1 - {R^2}_{included}}$$

where R^2 *included* indicates the R^2 of the dependent variable when the independent variable is included, and R^2 *excluded* indicates the R^2 of the dependent variable when the independent variable is excluded.

A higher f^2 value indicates greater influence of the predictor variable on the dependent variable. An effect size of 0.02, 0.15 and 0.35 indicates a small, medium or large influence on the predictor variable, respectively (Cohen, 1988). A small f^2, however, does not necessarily imply an unimportant effect (Wilson, 2010). In the present study, a number of sub models were created, each with one path missing in order to test for their effect size.

(ii) Path-Coefficients

The PLS structural model's path coefficient values are interpreted in a similar manner to standardised regression coefficients (Fornell & Cha, 1994; and Gefen et al., 2000). Path coefficients indicate the strength of the relationships between the dependent and independent variables. The stability of the path estimates can be assessed through the PLS resampling techniques.

(c) Resampling Techniques

(i) Q-Square Predictive Relevance (Blindfolding)

The predictive sample reuse technique, as developed by Stone (1974) and Geisser (1975), can also be applied to test the model's predictive validity (Chin, 1998b; 2010). The technique represents a combination of cross-validation and function fitting with the perspective that the prediction of observables or potential observables is of much greater relevance than the estimation of what are often artificial construct-parameters (Geisser, 1975). In PLS, the blindfolding procedure is used to carry out this test, which omits a part of the data for a particular block of indicators during parameter estimations and then attempts to estimate the omitted part using the estimated parameters. This procedure is repeated until every data point has been omitted and estimated. The predictive measure for the block becomes:

$$Q^2 = 1 - \frac{\sum_d E_d}{\sum_d O_d}$$

where *d* is the distance point; *E* is the sum of squares of prediction error; and *O* is the sum of squares errors using the mean for prediction. Q^2 represents a measure of how well-observed values are reconstructed by the model and its parameters. If Q^2 measures more than 0, the model is considered to have predictive relevance, whereas a Q^2 measure of less than 0 represents a lack of predictive relevance (Chin, 1998b; 2010).

The blindfolding procedure generates two different forms of Q^2: the cross-validated communality Q^2 and the cross-validated redundancy Q^2 (Fornell & Cha, 1994; and Chin, 1998b; 2010). The cross-validated redundancy measures the ability of the model to predict the endogenous manifest variables using the latent variables that predict the block in question, and serves as a sign of the quality of the structural model (Tenenhaus et al., 2005). The cross-validated communality measures the ability of the path model to predict the manifest variables or data points from their own latent variable score, and serves as an indicator of the quality of the measurement model. Chin (1998b) suggests using the cross-validation redundancy measure to evaluate the predictive relevance of the theoretical/structural model. An omission distance for blindfolding of between 5 and 10 is considered to be sufficient. (Wold, 1982; and Chin, 1998b; 2010).

(ii) Jackknifing

The jackknife is an inferential technique that assesses the variability of a statistic by examining the variability of the sample data rather than using parametric assumptions (Chin, 1998b). This technique provides both estimates and compensates for bias in statistical estimates by developing robust confidence intervals. The procedure deletes *n* cases where *n* is typically 1. Parameter estimates are then calculated for each instance and the variations in the estimates are analysed. The jackknife, however, is viewed as less efficient than the bootstrap because it can be considered as an approximation to the bootstrap (Efron & Tibshirani, 1993; and Chin 1998b).

(iii) Bootstrapping

The bootstrap is a nonparametric technique for estimating the accuracy of the PLS estimates and is preferable to the less efficient jackknife approach (Chin, 1998b). This technique creates *n* sample sets in order to obtain *n* estimates for each parameter in the model. Each sample is obtained by sampling with replacements from the original data set until the number of cases is identical to the original sample set. A number of approaches for estimating confidence intervals have been developed, but the two procedures available in PLS-Graph are the jackknife and bootstrapping methods. Considering that the jackknife is judged to be less efficient than the bootstrap, and because it is also considered as an approximation to the bootstrap (Efron & Tibshirani, 1993), the current study will adopt the bootstrapping resampling technique.

Efron (1987) noted that applying 100 bootstrap iterations would suffice for the estimation of standard errors, but supported the use of 1,000 iterations, for deriving good estimates for

the bootstrap confidence intervals. Efron & Tibshirani (1986) explain that confidence intervals are essentially a more ambitious measure of statistical accuracy than standard errors, and therefore require more computational effort.[107] Most recent studies on bootstrapping techniques tend to suggest the use of 1,000 resamples (Chernick, 2008). This study will therefore use 1,000 resamples for the bootstrapping procedure, in an attempt to improve the accuracy of the models' estimation of the confidence intervals and estimates of standard errors.

(d) Overall Model Validation

(i) Goodness of Fit Index

PLS does not optimise any global scalar function and, therefore, an index to evaluate the overall quality of the model is not available (Duarte & Raposo, 2010). To overcome this shortcoming, a global criterion of goodness of fit (GoF) was proposed by Tenenhaus et al. (2004) for validating the PLS model globally. The GoF index takes into account the model's performance in both the measurement and the structural model, thus providing a single measure for the overall prediction performance of the model (Esposito Vinzi et al., 2010). The fit of the model is determined by taking the square root of the product of the geometric mean of the average communality and the average R^2:

$$\text{GoF} = \sqrt{\overline{\text{communality}} \times \overline{R^2}}$$

where the average *communality* is computed as weight average of the different communalities with the number of manifest variables or indicators of every construct as weights. The average R^2 is the average R^2 of the endogenous constructs.

The first part of the formula measures the quality of the outer model and the second part measures the quality of the inner model. The computation for the average communality should only be used for constructs with multiple indicators (Tenenhaus et al., 2005). Single indicator constructs should not be used for the computation of the average communality, because they lead to communalities equal to 1 (Tenenhaus et al., 2005). Further, the GoF is considered to be more appropriate for reflective models (Esposito Vinzi et al., 2010).

The computed GoF index ranges from between 0 and 1; however, there is no inference-based threshold to judge the statistical significance of their values (Esposito Vinzi et al.,

[107] Advances in modern technology mean that researchers are not limited by computational speed when determining the number of iterations in a bootstrapping procedure.

2010). Further, there are no clear guidelines as to the threshold for the values; however, recent studies seem to suggest that a GoF index of approximately 0.3 is acceptable (Duarte & Raposo, 2010; and Tenenhaus et al., 2005).[108] Further, Chin (2009) also considered a GoF of 0.3 to be adequate.

The research model comprises constructs all having multiple reflective indicators, which is suitable for calculating the GoF statistic. The GoF index was therefore computed to measure the fit of the combined measurement and structural model. This is more efficient than applying the two separate Q^2 tests (communalities and redundancy tests) prescribed for the Stone-Geisser test, which requires two separate measures (Stone, 1974; and Geisser, 1975).

5.6 SUMMARY

This chapter introduced the research methodology and research design adopted for this study. The key objectives were to examine the influence of beliefs and attitudes towards paying tax, and to test the applicability of the TPB model and provide justification for the use of SEM with PLS in tax compliance research.

The development of the questionnaire relating to the TPB model was guided by the guidelines established by Ajzen (1991), and the remaining questions were based on prior literature. The design of the survey instrument was influenced by Dillman's (1978; 2000) 'tailored design method'. Both the mail and web-based surveys were self-administered to randomly selected taxpayers, tax agents and tax lawyers.

This chapter also presented a description of the analytical methodology, which included details of the approaches used to address missing data, nonresponse bias, sample representativeness, and the descriptive analysis proposed for the selected demographic and study variables.

Next, the SEM with PLS approach was introduced, followed by a discussion of the key differences between the PLS and the CBSEM methods. Reasons were also provided to justify the use of PLS (as opposed to CBSEM) for analysing the survey data. The validation process of the measurement models, which included a number of reliability and validity tests, was discussed. The process involved testing for indicator reliability, construct reliability, convergent validity and discriminant validity. The methods applied to evaluate the structural models were also discussed, which included: estimating the path coefficients, and the

[108] Duarte and Raposo (2010) obtained a GoF index measuring 0.3814, whereas Tenenhaus et al. (2005) obtained a GoF index of 0.4645.

variance explained or R^2 for each endogenous construct in the model. These two measures were used to evaluate the predictiveness of the survey models. The bootstrapping method with 1,000 iterations (resamples) was used for the resampling technique.

Finally, the computation of a GoF index was discussed, which is a nonparametric test to evaluate the overall performance of the research model developed to test the hypotheses established in Chapter 4. The next chapter presents the results from the preliminary analysis.

CHAPTER 6
PRELIMINARY RESULTS

6.1 INTRODUCTION

This chapter presents the results of the relevant preliminary analysis described in Chapter 5, while the next chapter (Chapter 7) presents the results from assessing the measurement and structural models. The first section, section 6.2, presents the results of the survey and includes the response rates for the three selected sample groups. Section 6.3 describes the data screening process used in this study. This is followed by section 6.4 which presents the results of the nonresponse bias and sample representativeness tests carried out on the survey data. Section 6.5 presents a description of the profiles of the observed samples. The results of some preliminary data analysis carried out on the survey data are presented in section 6.6, while section 6.7 presents the descriptive statistics of selected study variables. Section 6.8 presents the results of respondents' perceptions of the comparative seriousness of tax noncompliance and its effect on compliance behaviour. Section 6.9 provides a summary of the views from respondents who were subjected to the penalties regime. Finally, section 6.10 concludes this chapter with a summary of the results.

6.2 ANALYSIS OF SURVEY RESPONSES

6.2.1 Response Rate

The level of response rate is always of interest in any survey research, which depends on the generalisability of the results of the survey. The survey response for each group is summarised in Table 6.1.

Table 6.1: Response Rates for Observed Samples

Number of Mail-outs and Returns	**Taxpayers**		**Tax Agents**		**Tax Lawyers**	
	Numbers	**Percentage**	**Numbers**	**Percentage**	**Numbers**	**Percentage**
First Mail-out	1000	100	1000	100	266	100
Not-delivered	62	6.2	18	1.6	21	7.89
Second mail-out	938	100	n/a	n/a	n/a	n/a
Not-delivered	20	2.13	n/a	n/a	184*	n/a
Total delivered	918	97.87	982	100	61	100
Total received	194	21.13	183	18.6	37	60.65
Response Rate (%)	21		19		61	

*Note: Out of the 266 members of the New Zealand Law Society whose work comprises more than 50 percent tax work, 184 members work for the Inland Revenue Department.

The response rate for the Taxpayer sample was calculated as the percentage of all those respondents in the initial sampling frame who received the survey instrument, were able and willing to participate, and who completed and returned the survey in the pre-paid envelope. A total of 1,000 survey packages were mailed out in early August 2006, with the sample randomly selected from the 2006 Electoral Roll. A total of 82 survey packages were returned; 62 from the first mail-out and 20 from the second mail-out. This worked out to a 21 percent response rate for the Taxpayer sample.

A total of 1,000 emails with an attached link to the web-based survey were distributed in early December 2007 by the New Zealand Institute of Chartered Accountants (NZICA) to randomly selected members. A similar approach, as the one adopted for the Taxpayer sample, was employed in calculating the response rate for the Tax Agent sample. A total of 18 instruments were not delivered, due to the following reasons: the email address was not current, a prolonged absence from the office, the person was on long-term leave, or not currently practicing and now retired. Due to NZICA's policy on unsolicited emails, only one mail-out was allowed. Table 6.1 shows that a response rate of 19 percent was achieved for the Tax Agent sample.

In terms of the Tax Lawyer sample, the link to the survey website was forwarded by the New Zealand Law Society (NZLS) to 266 members whose work comprises more than 50 percent tax work. This was the total population of members of the NZLS whose work comprises more than 50 percent tax work. As a result of NZLS's policy on unsolicited emails, only one mail-out of the questionnaire was allowed. Further, out of the total population of 266 members identified for the survey, 184 worked for the IRD. The response rate for this sample was therefore calculated as a percentage of the total number of NZLS members who received the survey instrument, minus the estimated number of members who worked for the IRD and who were unable to participate.[109] In addition, a total of 21 instruments were not delivered. This resulted in a response rate of 61 percent for the Tax Lawyer sample.

Whilst the response rates for the Taxpayer and Tax Agent samples may seem low, this outcome was expected, given the sensitive nature of the questions, and the length of the questionnaire (Neuman, 2006). Based on the length of the questionnaire (an eight page booklet), some respondents may have started but not completed the questionnaire (Galesic & Bosnjak, 2009). Others may not have been comfortable or willing to answer sensitive questions about themselves, or may not have the knowledge or interest in issues relating to

[109] IRD staff members are subject to an internal code of conduct which prohibits them from commenting on any aspects of the tax legislation and case law.

tax.[110] In terms of the web-based survey, the Director of Taxation for NZICA (Craig McAlister) confirmed that the normal rate of response for similar studies conducted on NZICA members have in the past ranged from 17 percent to 19 percent.[111] In two similar reviews comparing the response rates of postal with electronic mail surveys, electronic surveys displayed lower response rates than postal surveys (Schaefer & Dillman, 1998; and Mavis & Brocato, 1998).[112] McKerchar (2010) also found response rates for web-based surveys to be generally lower than for mail-based surveys.

Further, other studies of tax compliance behaviour have yielded even lower response rates. For example, a recent Australian study by Tran-Nam and Karlinsky (2008) reported an overall response rate of only 8.6 percent. The survey was conducted in early 2008 and involved distribution of the questionnaire by email. In addition, a much lower response rate of 5.5 percent was recorded in a survey conducted by Copeland and Harmelink (1995). Sivo et al. (2006) reviewed a large number of Information Systems research based on surveys and published in a number of journals. The review found response rates as low as 3 percent reported in the European Journal of Information Systems, while other low response rates reported include 5.7 percent in MIS Quarterly, and 16 percent in the Journal of Management Information Systems. In contrast, Michaelidou and Dibb (2006) achieved a 93 percent response rate for their email survey for a consumer study, by addressing issues that may inhibit responses.[113]

Currently, there are no agreed-upon standards for minimum acceptable rates for surveys (Fowler, 2009, p.45); nonetheless, McKerchar (2005) suggested that bias associated with nonresponse must be considered. Therefore, although the number of responses for the Taxpayer and Tax Agent samples is more than adequate for the selected analytical approach adopted for this study, a number of tests were applied to the survey data to test for nonresponse bias. The Tax Lawyer sample was removed at this stage due to the small sample size which did not meet the requirements for the application of PLS-Graph.

[110] Two blank questionnaires were returned noting that they lacked the necessary knowledge to respond.

[111] Personal communication with regards to general response rates of past surveys conducted on NZICA members (January 2008).

[112] In one extreme case reviewed by Schaefer and Dillman (1998) the mail survey produced a response rate of 75.5 percent while the response rate for the email survey was only 28.1 percent.

[113] However, unlike a consumer study, a tax compliance study involves the respondents providing private and sensitive (and sometimes incriminating) information about their tax compliance behaviour, and therefore some of the suggested guidelines may not generally apply.

6.3 DATA SCREENING

6.3.1 Missing Data

In order to ensure that the data in the data matrix accurately reflects the respondents' views, it was necessary to screen all data before proceeding with the analysis. As set out in Chapter 5, the screening of data included checking for coding errors, patterns in the missing data, unusual or extreme responses and ensuring that the data satisfied the required statistical assumptions (Meyers et al., 2006).

A superficial analysis of the data revealed that it was of a reasonably high quality. The responses of each sample population were first examined for completeness and consistencies in the individual responses. The consistency checks were completed by comparing and cross-checking the responses to similar questions. This examination revealed that very few items were overlooked or disregarded and consistencies in responses were apparent.

As discussed in the previous chapter, the data-sets were also examined to identify variables with more than 10 percent missing data. The analysis of the Taxpayer data-set, to identify cases with more than 10 percent missing data, resulted in the deletion of a number of cases from the data-set. In terms of the Tax Agent sample, a more generous threshold was adopted on the basis that significant amounts of missing data can be attributed to the design of the web-based survey. During the testing phase some testers experienced issues in fully completing all the questions. This issue, however, was apparent in only a few responses received. As such, for the Tax Agent sample, a threshold of 20 percent was set, which meant that cases with more than 20 percent missing data were eliminated from the data-set.[114] Hair et al. (2006) maintain that a higher level of missing data (20 percent to 30 percent) can be remedied by applying one of the missing data imputation methods available.[115]

Consistent with Cohen and Cohen (1983) and Hair et al. (2006), cases with missing values for the dependent variables were also deleted from the data-set. Further, Structural Equation Modelling (SEM) commonly involves multiple dependent constructs, each measured with multiple indicators. Therefore, cases with missing values for all indicators of one or more constructs in the model were also considered for deletion. The only exception to this relates to two cases with one missing dependent variable each.[116] Schafer and Graham (2002) opined

[114] However, most cases retained have less than 10 percent missing data.

[115] As discussed previously the Tax Lawyer sample was removed because the sample size was too small and did not meet the required threshold of at least 130 cases for using PLS-Graph.

[116] Two respondents noted that they did not respond to one particular question (which is a measure of a dependent construct) because they found the particular question to be too personal. They, however, noted that they have completed the rest of the questionnaire.

that missing values on independent variables and missing values on dependent variables do not fundamentally differ, and any distinction between independent and dependent variables should be left to post imputation analyses. Further, the measure in question was part of a construct which has more than one measure. The outcome from the data screening exercise is presented in Table 6.2:

Table 6.2: Final Number of Useable Cases

Cases	Taxpayer Sample	Tax Agent Sample
Total cases received	194	183
Total cases deleted	14	19
Total useable cases	180	164

In summary, a total of 14 cases were deleted from the Taxpayer sample and 19 cases from the Tax Agent sample. This included cases where the dependent variables were missing (except for the two missing dependent variables noted previously). The above process reduced the Taxpayer data-set to 180 cases and the Tax Agent data-set to 164 cases. These reduced data-sets were used in all further analysis undertaken for this study.

Fowler (2009) maintains that a sample size does not have to be large for establishing the credibility of findings. Fowler (2009) argues that accuracy increases for sample sizes of 150 to 200 respondents, but after that point, the gain in accuracy is much more moderate. Fowler (2009, p. 44) further adds that "a sample size of 150 people will describe a population of either 15,000 or 15 million with virtually the same degree of accuracy, assuming that all other aspects of the sample design and sampling procedures are the same." This suggests that the final population of 180 cases for the Taxpayer sample is adequate to describe New Zealand's population of 4 million, and the 164 cases for the Tax Agent group is more than adequate to describe NZICA's population of 29,435 members,[117] and provide a reasonable level of accuracy in terms of the results of this study.

6.3.2 Data Analysis

The reduced data-sets were then subject to a number of statistical tests to assess the potential impact of outliers and to determine the normality of the distribution responses. Whilst the selected statistical approach, SEM with Partial Least Squares (PLS), does not require data to display certain assumptions underlying most multivariate techniques, it is

[117] In 2007 when the survey was distributed, NZICA had 29,435 members, however, the current membership stands at 32,733 (2011 Annual Report NZICA).

necessary if the data is to be used in parametric statistical techniques. Both data-sets were therefore assessed for normality and for outliers.

Normality tests on the two data-sets were performed by evaluating the skewness and kurtosis. The tests revealed that although the majority of variables fell within the acceptable range of $\pm$ 2 values of skewness and kurtosis (Pallant, 2011), some also fell outside that acceptable range. However, in a large sample such as the current data-sets used, the impact of skewness and kurtosis is minimal, suggesting a deviation from normality may not make a substantive difference in further analysis (Tabachnick & Fidell, 2007). The detrimental effects of non-normality only take effect for small samples of 50 or fewer observations (Hair et al., 2006). It is also accepted that in survey research, particularly in the social sciences, data collected in most instances will not be normally distributed (Hair et al., 2006). Further, most of the new data analysis techniques are reasonably 'robust' or tolerant of violations of this assumption (for example PLS-Graph).

An *extreme value analysis*, available in SPSS, is able to determine how much of a problem any extreme values are likely to cause (Pallant, 2011). The 5 percent Trimmed Means statistic will be able to assess whether any extreme values are distorting the results. The procedure involved the removal of the top and bottom 5 percent of the cases, after which a new mean value is recalculated. The original mean value is then compared with this new trimmed mean. If the trimmed mean and original mean values are very different, these data points need to be investigated further to determine how much of a problem these outliers may be causing (Pallant, 2011). The results from this analysis revealed that for the majority of the variables, the two mean values did not differ too much,[118] indicating no serious problems with outliers.

6.4 RESPONSE BIAS ANALYSIS

6.4.1 Nonresponse Bias

The importance of testing for nonresponse bias in survey research was discussed in Chapter 5. A common approach frequently applied to determine whether nonresponse bias exists in survey data is to examine and compare the responses of early respondents with that of late respondents. The responses of late respondents are used as proxies for non-respondents (Armstrong & Overton, 1977; and Leong, 1980). If there are no significant differences in the responses between these two groups, it can be assumed that nonresponse bias is not a problem.

[118] Currently, no published threshold is available to indicate the level of acceptance.

In this study, 194 responses were received from the Taxpayer sample group and 183 responses from the Tax Agent sample group. Consistent with Armstrong and Overton (1977), the first 25 percent of responses were selected to represent early respondents while the last 25 percent of responses received were used to represent late respondents (and proxy non-respondents). Therefore, the first and last 48 cases from the Taxpayer sample and the first and last 46 cases from the Tax Agent sample were used to test for nonresponse bias, on each variable used in this study. The independent samples *t*-test was employed to compare the means score for the two groups of respondents (Gaur & Gaur, 2006; and Pallant, 2011), in order to determine whether the two groups are similar.

The SPSS output provides the results of two sets of analysis: the first set assumes equal variances in the two groups, with the second set assuming unequal variances. The *Levene's Test for Equality of Variances* indicates which values to use in order to analyse the equality of the means (Hinton et al., 2004; and Gaur & Gaur 2006). One of the assumptions for using this test is that both samples have equal variances. Therefore, if the test statistic F is not significant, that is, $p > 0.05$, the two variances are considered to be not significantly different, and the equal variance assumption can be accepted. In this case, the first set of analysis is used and the null hypothesis is true, and has to be accepted.[119] Conversely, if the test statistic F is significant, that is, $p < 0.05$, Levene's test concludes that the two variances differ significantly, and the values in the second set of analysis (statistic associated with *equal variances not assumed*) should be used (Hinton et al., 2004; and Gaur & Gaur, 2006).

Adopting the above recommended procedure, the results generated for the Taxpayer sample show that out of the 119 variables tested, 114 variables (or 96 percent) reported insignificant test scores at the predetermined value of $p > 0.05$. Only five variables (or 4 percent) displayed observed levels of significance below the pre-established alpha of $p < 0.05$. This outcome indicates that both early and late responses have variances that are not significantly different. Similarly, the results for the Tax Agent sample show that out of 119 variables tested, all except seven variables displayed observed levels of significance over the pre-established alpha of $p > 0.05$. This indicates that a large majority of the variables tested reported insignificant outcomes, clearly suggesting that both early and late responses from the Tax Agent sample also have variances that are not significantly different.

Lewis and Ford (1987, p.95) note that where the observed statistics are more than the pre-established significance level of 0.05, the null hypothesis cannot be rejected. The results reveal that a large majority of the observed values are over the predetermined threshold of

[119] The null hypothesis is that the two groups (early and late respondents) have equal variances.

$p > 0.05$ significance level, which means that the null hypothesis that states that the early and late respondents have equal variance cannot be rejected. A few differences do not suggest that one group is different from the other (Hirst & Goeltz, 1984). The extrapolation of early and late respondents on both the study and demographic variables offers some assurance that respondents and non-respondents do not differ on sample characteristics or in their beliefs and attitudes that are of interest to this study. The next section presents details of the additional test applied to assess the representativeness of the observed samples.

6.4.2 Representativeness of Observed Samples

The representativeness of the observed samples can be established by determining whether each of the survey samples adequately represent their corresponding population distribution. This involves comparing five attributes from the observed or survey samples with attributes from the total population. The attributes selected were gender, age, income level, income source, and educational attainment.[120]

Selected attributes of the Taxpayer sample were compared to that of the New Zealand population obtained from Statistics New Zealand's website.[121] The Tax Agent sample's attributes were compared to information available from NZICA's 2006 Annual Report[122] while information on remuneration was sourced from published results from the remuneration survey undertaken in the 2007 year.[123] The results are presented in Table 6.3 for the Taxpayer sample and Table 6.4 for the Tax Agent sample.

(a) Gender (Taxpayer)

The gender split for the Taxpayer sample is 50 percent males and 50 percent females. This roughly mirrors the breakdown of the population distribution of New Zealand, which is reported by Statistics New Zealand to have a gender split of 49 percent males and 51 percent females.

(b) Age (Taxpayer)

The percentage of respondents in the 25 to 44 years age bracket, and the over 65 years age bracket, are similar for both populations. The 45 to 65 years age bracket appears larger for the

[120] These demographic variables were selected because statistics for these attributes were more readily available for the New Zealand population.

[121] Data downloaded from http://www.stats.govt.nz/census/Census2006HomePage.aspx.

[122] Available from www.nzica.com.

[123] The results of the remuneration survey conducted for the 2007 year was retrieved from NZICA's website at http://www.institutesurvey.co.nz/2008/2007results.asp.

observed population than for the total New Zealand population. The under 25 years age group seems to be underrepresented in the observed population. The results also indicate that a large proportion from the sample population and total population appear to be clustered around the 25 to 64 age bracket.

(c) Income Level (Taxpayer)

The range of income brackets established for the survey does not mirror the income brackets reported for the total New Zealand population, except for the $40,000 and over income bracket. Therefore, it was not possible to make any comparative analysis between the observed sample and the population distribution with regards to income level. Nevertheless, it is clear that high income earners are overrepresented in the observed population, and low income earners underrepresented.

(d) Income Source (Taxpayer)

Respondents who derive their income from salary and wages, investments[124] and from other sources appear to be adequately representative of the total population. In contrast, self-employed respondents are significantly overrepresented, making up 29 percent, compared to 12 percent in the total population. The student population is also not represented in the survey sample; however, the student percentage reported in the total population is extremely low (1 percent). Those receiving welfare, pensions or similar payments are also underrepresented in the sample population.

(e) Educational Level (Taxpayer)

Respondents with Year 11 or under qualifications, or who have trade or vocational qualifications, or other qualifications, appear to adequately reflect the total population. Respondents with Year 12 or Year 13 qualifications seem to be underrepresented in the observed population. In contrast, university graduates appear to be overrepresented, and also make up the largest group in the survey. This is not a surprise given that this group may have more confidence to respond to the type of tax questions in the survey instrument.

[124] Investment income refers to interests, dividends, rents, royalties and other similar income.

Table 6.3: Representativeness Analysis (Taxpayer)

Summary Characteristics of Socio-Demographic Variables (Taxpayer)					
Observed Population			**Total Population**		
Variables	Survey Numbers	Percentage %	Variables	Census Numbers	Percentage %
Gender					
1. Male	89	50	Male	1,965,621	49
2. Female	89	50	Female	2,062,326	51
Total	*178*	*100*	*Total*	*4,027,947*	*100*
Age					
1. Under 25 years	5	3	Under 25 years	385,074	13
2. 25 to 44 years	64	36	25 to 44 years	1,134,252	38
3. 45 to 64 years	82	45	45 to 64 years	959,334	32
4. 65 years and over	28	16	65 years and over	495,612	17
Total	*179*	*100*	*Total*[a]	*2,974,272*	*100*
Income					
1. Under $20,000	28	16	Under $20,000	1,081,302	38
2. $20,000 to $39,999	38	21	$20,000 to $39,999	839,031	30
3. $40,000 to $59,999	44	25	$40,000 and over[b]	774,106	27
4. $60,000 and over	66	37	n/a	n/a	n/a
5. None	1	1	None	145,050	5
Total	*177*	*100*	*Total*	*2,839,485*	*100*
Income Source					
1. Salary/Wages	82	46	Salary/Wages	1,775,340	41
2. Interest/Dividends	18	10	Investment income[c]	714,729	17
3. Rents/Royalties	9	5	n/a	n/a	n/a
4. Self-employed	52	29	Self-employed	492,024	12
5. Student	0	0	Student	64,284	1
6. All welfare/pensions	6	3	All welfare/pensions	950,478	22
7. Others	3	2	Others	287,202	7
9. Multiple Sources	8	5	-	-	-
Total	*178*	*100*	*Total*	*4,284,057*	*100*
Education					
1. Year 11 and under	32	18	Year 11 and under	389,259	22
2. Year 12 or 13	18	10	Year 12 or 13	440,460	25
3. Trade/Vocational	52	29	Trade/Vocational	507,891	28
4. University	56	32	University	292,086	16
5. Others	20	11	Others and Overseas	166,170	9
Total	*178*	*100*	*Total*[d]	*1,795,866*	*100*

Legend:

[a]*Total figure excludes those aged between 0 and 18 years (i.e. those excluded from the Electoral Roll).*

[b]*Census data does not provide any further breakdown of income levels.*

[c]*Census data summed the total of income such as: interest, dividends, rents and royalties.*

[d]*Total does not include the 1,944,625 people who do not possess any qualifications and the large number of responses that were unusable.*

Note:

1. Also note that missing data for demographic valuables were not included in the above calculation, which explains the different total figures above.

2. All figures have been rounded to the nearest whole number where applicable.

The next section and Table 6.4 provide the comparative results for the Tax Agent survey sample. The 2007 Annual Report published indicates a total membership of 29,435 members.[125]

Table 6.4: Representativeness Analysis (Tax Agent)

Summary Characteristics of Socio-Demographic Variables (Tax Agent)					
Observed Population			**NZICA Population**		
Variables	Survey Numbers	Percentage %	Variables	NZICA Numbers	Percentage %
Gender					
1. Male	100	61	Male	18,534	63
2. Female	63	39	Female	10,901	37
Total	*163*	*100*	*Total*	*29,435*	*100*
Age					
1. Under 25 years	5	3	Under 30 years	3,402	12
2. 25 to 44 years	84	51	30 to 39 years	8,447	29
3. 45 to 64 years	68	42	40 to 49 years	8,393	29
4. 65 years and over	7	4	50 to 59 years	4,764	16
-	-	-	60 years and over	4,083	14
Total	*164*	*100*	*Total*	*29,089*[a]	*100*
Income					
1. Under $20,000	2	1	Average salary for NZICA members was $144,347.00 (the figure may include other remuneration).[b]		
2. $20,000 to $39,999	5	3			
3. $40,000 to $59,999	26	17			
4. $60,000 and over	125	79			
Total	*158*	*100*			
Income Source					
1. Salary/Wages	122	75	The majority of NZICA members are salary and wage earners.		
2. Interest/Dividends	4	2			
3. Rents/Royalties	1	0.7			
4. Self-employed	34	21			
5. Student	0	0			
6. All welfare/pensions	1	0.7			
9. Others	1	0.6			
Total	*163*	*100*			
Education					
1. Year 11 and under	0	0	The majority of NZICA members would hold a university degree.		
2. Years 12 or 13	1	1			
3.Trade/Vocational	9	5			
4. University	140	86			
5.Others	13	8			
Total	*163*	*100*			

Legend:

[a]*Figure excludes 346 missing data.*

[b]*Salary band not available. Average annual salary of members obtained from Remuneration Survey.*

Note:

1. Also note that missing data for demographic valuables were not included in the above calculation, which explains the different total figures above.

2. All figures have been rounded to the nearest whole number where applicable

[125] Refer to page 29 of the 2007 NZICA Annual Report.

(f) Gender (Tax Agent)

The gender split for the observed sample of 61:39, males to females, is almost identical to the gender split of 63:37, males to females, reported for the total NZICA population.

(g) Age (Tax Agent)

The age brackets established for the survey differ significantly from the age brackets reported for the NZICA population. As such, it was not possible to make any meaningful comparisons between the two populations. However, it appears that the largest group of respondents are concentrated in the middle age bracket.

(h) Income Level (Tax Agent)

The breakdown for the various levels of income for the NZICA population is not available. However, the figures for the average income earned per year can be found in the Hudson Remuneration Survey published yearly.[126] The published results indicate an average income of $144,347 per year for members for the 2007 year.[127] A significant number of respondents (over 79 percent) earn more than $60,000 per annum, which compares favourably with the 2007 Remuneration Survey statistics published.[128] Data for the remaining income categories were not published in the survey report and therefore not available for any comparative analysis between the two populations.

(i) Income Source (Tax Agent)

Statistics for the source of income for the total NZICA population are not available. Therefore, a comparison cannot be made for each category of income source. However, the 2007 Remuneration Survey indicates that a majority of members derive their income from salary and wages (either in accounting firms or in various corporate organisations or industries). The sample population comprises a significant number of respondents earning income through salary and wages, which is consistent with the statistics for the total NZICA population. Therefore, it can be assumed that the majority of respondents in both populations are salary and wage earners.

[126] Hudson Remuneration Survey retrieved from http://www.institutesurvey.co.nz/2008/2007results.asp.

[127] Average income for the 2007 year, which is the year the survey was distributed.

[128] 2007 Hudson Remuneration Survey retrieved from http://www.institutesurvey.co.nz/2008/2007results.asp.

(j) Educational Level (Tax Agent)

Statistics on educational attainment are also not available for each individual educational level. However, it is commonly accepted that most NZICA members are tertiary qualified (except those wishing to apply for Accounting Technician status).[129] As such, in the absence of any statistical data, it can be inferred that the majority of NZICA members are university graduates. The survey data reveals that a large majority of respondents (86 percent) are university graduates, suggesting adequate representation to the total NZICA population.

In general, the sample observed in the Taxpayer survey appears to be adequately representative of the total population. There is sufficient agreement between the observed sample and the population distribution in most of the selected attributes, notwithstanding the high percentage of self-employed, high earners and university graduates among the respondents (compared to the population distribution). Nonetheless, this outcome is expected, since respondents in this category would have a better working knowledge of taxation, and therefore have the expertise to participate in the survey.[130] Further, the self-employed have to make regular tax paying decisions,[131] which highlights the importance of including this group in the current study. Similarly, the Tax Agent survey generated a sample that is an approximate representation of its corresponding population, with a few minor and inconsequential exceptions, some resulting from the unavailability of the necessary statistics. The next section reports on the respondents' profiles.

6.5 SAMPLE CHARACTERISTICS (RESPONDENTS' PROFILES)

This section describes the survey respondents' profiles. The various demographic characteristics of the respondents by *Age*, *Gender*, *Income Level*, *Income Source,* and *Educational Level,* are summarised previously in Table 6.3 and 6.4.

6.5.1 Age

Across both samples, the largest concentration of respondents participating in the survey is clustered around the 25 to 44 and 45 to 64 age groups. Collectively, these two groups represent 81 percent of respondents in the Taxpayer sample and 93 percent of respondents in the Tax Agent sample. Both samples are underrepresented by respondents belonging to the

[129] It should be noted that older members may not be tertiary educated.

[130] A few blank questionnaires were returned in the pre-paid envelope, noting that they did not have the knowledge to complete the questionnaire. This suggests that some tax knowledge is required to be able to confidently complete the questionnaire.

[131] Most income types listed in the questionnaire are subject to a form of withholding tax, except income earned by those who are self-employ.

under 25 years and over 65 years age brackets. Nonetheless, the age of respondents cover all the range of categories established for the survey.

6.5.2 Gender

Gender is equally represented in the Taxpayer sample, comprising of a 50:50 split, of males and females, indicating that an equal number of males and females participated in the survey. In contrast, the Tax Agent sample has a higher percentage of males (61 percent) compared to females (39 percent). However, as discussed previously, this is consistent with the data obtained from NZICA and is representative of the total NZICA population.

6.5.3 Income Level

The largest group of respondents (37 percent) from the Taxpayer sample are in the higher income bracket (that is, over $60,000), while the mid-income brackets ($20,000 to $39,000 and $40,000 to $59,000) are also well represented in the sample. A reasonable number of respondents earn under $20,000. The results indicate the Taxpayer sample covers all income brackets created for the survey.

Respondents from the highest income bracket ($60,000 and over) are significantly overrepresented in the Tax Agent sample, with comparatively marginal representation in the lower income brackets.[132] This is representative of the level of income earned by members of this profession. Notwithstanding this situation, all categories of identified income brackets are covered by participants of the survey.

6.5.4 Income Source

A large percentage of respondents from the Taxpayer sample are salary and wage earners (46 percent), followed by those who are self-employed (29 percent). Similarly, the Tax Agent sample is dominated by salary and wage earners (75 percent), followed by the self-employed (21 percent). Full-time students are not represented in either sample, while the remaining sources are also less represented, especially in respect to the Tax Agent sample. However, all categories, (except full time students) are covered by both observed samples (albeit at a minimal level in some cases).

[132] The median annual personal income from all sources for people aged 15 years and over was $24,400 in 2006 (Statistics New Zealand, 2006).

6.5.5 Educational Level

Most respondents from the Taxpayer sample (at least 60 percent) have completed a university degree, or trade or vocational training. The third largest group is made up of those with Year 11 or under qualifications. The remainder have either completed Year 12 or 13 or have some other qualifications. The majority of respondents appear to have attained higher qualifications, which may suggest that they would have sufficient knowledge on tax matters to be able to complete the questionnaire. Further, the respondents covered all listed categories.

As expected, a large percentage of respondents from the Tax Agent sample have completed a university degree (86 percent), compared to 5 percent who completed trade or vocational training. Only one respondent had a Year 12 or 13 qualifications, and none had qualifications at Year 11 or under. The level of tertiary educated respondents in this group suggests that most would have sufficient knowledge to be able to understand and respond correctly to the questions on tax and tax issues. While the majority hold higher qualifications, the respondents covered all categories except for the 'Year 11 and under' category.

In summary, a number of tests were performed on the two data-sets to determine the adequacy of the data for further analysis. The results suggest that the two observed samples are adequately representative of all categories established for the survey, in respect to the selected attributes. In particular, the results suggest that no serious problems are apparent in each data-set that may compromise the results of this study. The next section presents the results of some preliminary analysis, including descriptive statistics.

6.6 PRELIMINARY ANALYSIS

The previous chapter (Chapter 5) provided a detailed discussion of the preliminary data analysis that was undertaken for this study, which includes missing value analysis and descriptive analysis. The missing value analysis was undertaken to ensure the data-sets conform to the *missing completely at random* criteria, in order to justify the application of the EM technique to address missing data, whereas the descriptive analysis provides basic statistical qualities or properties of the data used in this study. The results of the analysis are presented and discussed in the sections that follow.

6.6.1 Missing Value Analysis

The data-sets used for the missing value analysis have already been screened. As a result, cases and variables with more than 10 percent missing values for the Taxpayer sample and 25

percent for the Tax Agent sample were eliminated.[133] This process reduced the Taxpayer sample from 191 cases to 180 cases, and the Tax Agent sample from 183 to 164 cases. The process also involved deleting cases with missing dependent variables, except in two instances where the respondents notified that these were intentionally left blank.

The reduced data-set for the Taxpayer research model comprises 180 cases, and 110 indicators, resulting in a total of 19,800 data points, with 149 missing values. The percentage of missing values is extremely low at 0.7 percent. Similarly, the reduced data-set of the Tax Agent model contains 18,040 data points (164 cases and 110 indicators), with 177 data points, or 0.9 percent missing values. The percentages of missing data points for both models appear to be hugely insignificant, and the percentages are also significantly lower than the percentages accepted in prior studies.[134]

Although the missing values are low, it is equally important to ensure that these remaining missing values are distributed randomly throughout the observations and no distinct patterns are identifiable in the data-sets. Data *missing completely at random* (MCAR) indicates a higher level of randomness, suggesting that "the cases with missing data are indistinguishable from cases with complete data" (Hair et al., 2006, p.57). Missing data that are not MCAR may cause problems in the generalisability of the results (Tabachnick & Fidell, 2007). Observations are considered to be MCAR if none of the variables in the data-set contain missing values related to the values of the variable under scrutiny (Meyers et al., 2006). A Missing Value Analysis was undertaken in SPSS, which produced the estimation statistics for Little's MCAR test. The null hypothesis for Little's MCAR test is that the data points are missing completely at random (MCAR). A non-significant value of $p = > 0.05$ indicates that the data are MCAR. The EM estimates table for the Taxpayer sample reports a non-significant value of 0.399 while the EM estimates table for the Tax Agent sample shows a non-significant value of 0.558, both clearly exceeding the $p = > 0.05$ threshold.[135] The null hypothesis (which states that the data point are missing completely at random) therefore cannot be rejected, and indicates that the missing data points are probably missing completely at random, with no evidence present of any systematic pattern of missing data. This outcome suggests that any estimation method applied should produce unbiased results (Hair et al., 2006).

[133] Although the threshold for the Tax Agent sample was set at 25 percent, most missing values for cases and variables were under 10 percent.

[134] Missing values as recorded in the following studies: 2.6 percent (Yue, 2004), 2 percent (Vatanasakdakul, 2007), and 7 percent (Venik, 1999).

[135] Little's Chi-square statistics for testing whether values are MCAR is available as a footnote to any EM estimate table generated by SPSS.

6.6.2 Estimation Technique

The choice of missing data imputation was next considered. Tabachnick & Fidell (2007, p. 71) noted that the Expectation Maximisation (EM) methods generally offer the simplest and most reasonable approach to imputation of missing data, as long as the preliminary analysis provides evidence that scores are missing randomly. The missing value analysis confirmed that the missing data points are missing completely at random. Further, a recent study by Kristensen and Eskildsen (2010) compared four different methods of handling missing values in a PLS model, which included the EM substitution, pair-wise deletion, means substitution and regression-based substitution. All of these approaches are available in the SPSS Missing Values module.[136] The results provided evidence that the regression technique and the EM algorithm in general outperformed the other techniques examined. The study also noted that, for small fractions of missing values, the two techniques are not significantly different. However, when the fraction of missing values is increasing, the EM algorithm is superior to the regression technique.

After careful consideration, the EM algorithm was selected, on the basis that the EM algorithm was considered to be superior to the other available methods. This ensures the data-sets are complete for both samples, and is adequate for further analysis. The next section presents the results from the descriptive analysis, in respect to selected study variables.

6.7 DESCRIPTIVE STATISTICS FOR STUDY VARIABLES

The means, standard deviation, and minimum and maximum scores were computed for each of the Theory of Planned Behaviour (TPB) constructs and its corresponding measures. The composite scores for the means of each construct were derived by adding up all the expectancy and value items' scores and then averaging the summed score. Likewise, the composite score for the means of each measure was derived by adding up the expectancy and value item scores of each individual measure. The average score for each construct, and each measure, was then described in terms of means and standard deviation, and presented in Tables 6.5 to 6.7. Lower scores indicate increased importance of an item towards intentions to comply, whereas higher scores indicate the importance of an item towards intentions not to comply. All measures also reported acceptable variances (Hair et al., 2006). The means of the remaining study variables are presented in Appendix 17 (Taxpayer) and Appendix 18 (Tax Agent).

[136] The SPSS Missing Values Analysis is considered to be adequate for estimating replacement values (Meyers et al., 2006).

6.7.1 Measures of Attitudes

Two different attitude constructs were included in the research model: attitudes based on legal and non-legal sanctions. Each attitude construct is measured by three composite indexes of behavioural belief strengths and outcome evaluation. Individual indicators of non-legal attitude include a sense of civic duty, moral obligation and feelings of guilt, all associated with the performance or non-performance of the behaviour of interest. Table 6.5 presents descriptive statistics for the attitudes towards the behaviour construct.

Table 6.5: Descriptive Statistics for the Attitude Constructs and its Measures

Attitude Indicators	N	**Taxpayer**				**Tax Agent**			
		Min	Max	Mean	Std Dev	Min	Max	Mean	Std Dev
Non-Legal Attitude									
ATTI	6	1.00	5.80	2.76	1.01	1.00	4.67	2.53	0.67
Civic	2	1.00	5.50	2.59	1.02	1.00	5.00	2.59	0.83
Moral	2	1.00	7.00	2.11	1.36	1.00	5.00	1.59	0.86
Guilt	2	1.00	7.00	3.58	1.44	0.91	7.00	3.39	1.22
Legal Attitude									
ATT2	6	1.00	6.67	3.31	1.29	1.00	6.00	3.68	1.17
Certainty of Detection	2	1.00	7.00	3.71	1.82	1.00	7.00	4.26	1.70
Certainty of Punishment	2	1.00	7.00	3.36	1.46	1.00	7.00	3.86	1.46
Severity of Punishment	2	1.00	7.00	2.85	1.46	1.00	7.00	2.91	1.21

Overall, the Tax Agent sample (means score of 2.53) appears to be influenced more by non-legal sanctions than the Taxpayer sample (means scores of 2.76) in their tax compliance decisions. The more important measure influencing intentions to comply, for both samples, is the sense of moral obligation towards paying tax. This is followed by the sense of civic duty and feelings of guilt associated with tax compliance (noncompliance) behaviour. The results suggest that moral obligations towards paying tax are one of the key elements influencing attitudes.

With regard to attitude based on legal sanctions, the Taxpayer sample (means score of 3.31) appears to be influenced more by the effects of legal sanctions than the Tax Agent sample (means score of 3.68). The results further indicate that respondents in both samples were mostly influenced by the severity of punishment in their intentions to comply, followed by the certainty of punishment (probability of punishment), and lastly, by the certainty of

detection (or probability of detection). The key element influencing attitudes based on legal sanctions for both groups seem to be the perceived severity of punishment.

6.7.2 Measures of Subjective Norms

Subjective norms consist of three composite measures, representing three aspects of subjective norm. Each of these composite measures assesses the normative beliefs and the motivation to comply. These measures include: referents' expectations of them, referents' own tax paying behaviour, and perceived loss of respect from the referent if they do not comply with their tax obligations. Descriptive statistics for subjective norm are displayed in Table 6.6.

Table 6.6: Descriptive Statistics for Subjective Norms and its Measures

SNORM Indicators	N	**Taxpayer**				**Tax Agent**			
		Min	Max	Mean	Std Dev	Min	Max	Mean	Std Dev
Subjective Norms									
SNORM	6	1.00	6.33	2.84	1.39	1.00	6.00	2.59	1.18
Snorm 1 (referents' expectation)	2	1.00	7.00	2.65	1.69	1.00	7.00	2.27	1.35
Snorm 2 (referents' behaviour)	2	1.00	7.00	2.73	1.53	1.00	6.50	2.82	1.46
Snorm 3 (referents' respect)	2	1.00	7.00	3.15	1.78	0.20	7.00	2.68	1.53

Table 6.6 displays a lower means score (2.59) for the Tax Agent sample compared to the Taxpayer sample's score (2.84), indicating that subjective norms have more influence on Tax Agents' intentions to comply than on Taxpayers' intentions. In terms of the individual measures of subjective norms, referents' expectations of individuals' compliance behaviour was comparatively more influential on intentions than the other measures for the Taxpayers. This is followed by referents' own compliance behaviour, and the threat of losing referents' respect if they do not conform to referents' expectations. In contrast, the influential measures in the order of importance for the Tax Agents are: important referents' expectations, the threat of losing referents' respect, and important referents' own tax compliance behaviour.

6.7.3 Measures of Perceived Behavioural Control

Perceived behavioural control (PBC) comprises three items measuring control beliefs and another three measuring perceived control. Each measure is a composite score of control beliefs and the frequency of occurrence of these control beliefs. The three measures of PBC refer to the presence of opportunities, income subject to third party reporting and financial distress experienced during the compliance decision-making process. In summary, the lack of opportunities, income subject to third party reporting and financial distress could inhibit individuals from their intentions to not comply (and comply instead) with their tax obligations. Descriptive statistics for PBC are presented in Table 6.7.

Table 6.7: Descriptive Statistics for Perceived Behavioural Control and its Measures

PBC Indicators	N	**Taxpayer**				**Tax Agent**			
		Min	Max	Mean	Std Dev	Min	Max	Mean	Std Dev
Perceived Behavioural Control (PBC)									
PBC	6	1.00	6.00	2.51	1.25	1.00	7.00	2.74	1.26
PBC1 (opportunity)	2	1.00	7.00	2.56	1.47	1.00	7.00	2.83	1.44
PBC2 (third party reporting)	2	1.00	5.33	2.33	1.27	1.00	7.00	2.89	1.51
PBC3 (financial distress)	2	1.00	7.00	2.64	1.34	0.99	7.00	2.49	1.14

In summary, the Taxpayer sample scored a lower means score (2.51) compared to the Tax Agent sample's slightly higher score (2.74), indicating PBC's comparatively stronger influence on Taxpayers' compliance decisions. For the individual measures of PBC, the presence or absence of income subject to third party reporting appears to be the more important measure influencing Taxpayers' intentions to comply (or not comply). This is followed by the presence or absence of opportunities and financial distress. In contrast, the results highlighted the increased importance of the absence or presence of financial distress in Tax Agents' compliance decisions. The presence or absence of opportunity and income subject to third party reporting were rated as the second and third important measures influencing intentions to comply, respectively.

6.8 PERCEPTIONS OF TAX OFFENCES

A further analysis was undertaken to examine the perception of the seriousness of tax noncompliance compared to six other civil offences, which include: bicycle theft, welfare

fraud, bank fraud, driving offence, speeding offence, and drug offence.[137] Two measures were used to capture respondents' perceptions of the comparative seriousness of committing a tax offence. The first measure (rating) captures respondents' perceptions of the seriousness of each individual offence listed in the survey instrument, independent of the other listed offences. The second measure (ranking) requires respondents' to rank each offence in the order of perceived seriousness. The paired samples *t*-test (refer to Appendices 5 and 6) was applied to measure and compare the responses and to test for statistical significance (Gaur & Gaur, 2006; and Pallant, 2011). The survey procedure carried out was explained in Chapter 5.

6.8.1 Rating the Seriousness of Tax Offences

The results of the paired *t*-test, examining respondents' rating (or evaluation) of each listed offence are reported in Table 6.8. The mean score for each of the offences for both groups and the results of the significance test are included in the table. A lower mean score indicates that the offence is viewed as a less serious offence, whereas a higher score indicates that the particular offence is viewed as a more serious offence. All the means scores are significant at the $p = < 0.0001$ level with the exception of the marginal score for the drug offence (Taxpayer sample).

Table 6.8: Comparison of the Severity of Tax Offence to Other Civil Offences

Description of Offence	**Taxpayer**				**Tax Agent**			
	Tax Offence	Other Offences	Significance Test		Tax Offence	Other Offences	Significance Test	
	Mean	Mean	*t*-test	*p*-value	Mean	Mean	*t*-test	*p*-value
Bicycle theft	3.10	3.61	5.98	0.000	2.13	3.54	15.73	0.000
Welfare fraud	3.10	4.04	11.39	0.000	2.13	2.89	6.75	0.000
Bank fraud	3.10	3.87	10.06	0.000	2.13	3.41	12.24	0.000
Driving offence	3.10	3.43	3.44	0.000	2.13	4.00	17.73	0.000
Speeding offence	3.10	2.03	-11.76	0.000	2.13	3.61	14.31	0.000
Drug offence	3.10	2.88	-1.87	*0.063*	2.13	4.06	19.59	0.000

Legend:
Bicycle theft (SVA1) – Bicycle theft worth $1,000
Welfare fraud (SVA2) - Welfare fraud worth $1,000
Tax offence (SVA3) – No reporting tax of $1,000
Bank fraud (SVA4) - Defrauding a bank of $1,000
Driving offence (SVA5) - Driving while slightly over the alcohol limit
Speeding offence (SVA6) - Speeding 10kph over the speed limit
Drug offence (SVA7) - Smoking marijuana or cannabis

[137] The non-violent offences selected for this study were adapted from two relatively recent New Zealand studies (Gupta, 2006; 2007).

The results suggest that respondents from the Taxpayer sample perceive committing a tax offence as being less serious than committing a number of other non-tax civil offences, such as: welfare fraud, bank fraud, stealing a bicycle, and committing a driving offence. These four offences reported higher means scores than the means score attributed to the tax offence. On the other hand, respondents viewed committing a tax offence as more serious than committing a speeding or drug offence, with these two offences scoring lower means than the tax offence. In contrast, respondents from the Tax Agent sample viewed committing a tax offence as the least serious of all the listed offences, with the tax offence scoring a lowest means score of 2.13. The results are consistent with a similar relatively recent New Zealand study, which generally found that tax offences are viewed as somewhat less serious than other similar civil offences (Gupta, 2006).

Comparing the mean scores of both sample groups for the tax offence, reveals that, the Taxpayer sample (with a means score of 3.10) considers committing a tax offence as more serious than the Tax Agent sample (with a lower means score of 2.13). This may suggest that, compared to taxpayers, tax agents view tax noncompliance as less serious relative to other similar civil offences.

6.8.2 Ranking the Seriousness of Tax Offences

Respondents were also asked to rank the seriousness of the seven offences listed in the questionnaire, in the order of seriousness (from the most serious to the least serious). Table 6.9 presents the rankings awarded to each of the listed offences. For the purposes of this analysis, the scores are reversed, with the lowest scores corresponding to the least serious offence and the highest scores corresponding to the most serious offence.

Table 6.9: Ranking of Offences Surveyed

Description of Offence	**Taxpayer**		**Tax Agent**	
	Mean	Ranking	Mean	Ranking
Welfare fraud	5.34	1	2.11	7
Bank fraud	4.75	2	3.75	5
Bicycle theft	4.55	3	2.90	6
Driving offence	4.19	4	4.51	4
Tax fraud	3.61	5	4.76	3
Drug offence	3.20	6	5.04	1
Speeding offence	2.17	7	4.85	2

Of the seven listed offences, the Taxpayer sample rated welfare fraud as the most serious offence. This was followed by offences involving: bank fraud, bicycle theft, and driving offence (which were ranked as the second, third and fourth most serious offences in that order). The tax offence was ranked as the fifth most serious offence, with only the drug and speeding offences being rated as comparatively less serious. In contrast, the Tax Agent sample ranked the drug offence as the most serious offence, followed by the speeding offence. Tax fraud was ranked as the third most serious offence. The remaining offences (driving offence, bank fraud, bicycle theft, and welfare fraud) were ranked behind the tax offence, suggesting that these offences were considered less serious than committing a tax offence.

The above results in Table 6.9 provide useful insights as to how each group views tax offending in relation to other similar non-tax offences. As expected, the perception of the severity (or seriousness) of tax noncompliance differed between the Taxpayer group and the Tax Agent group. The Taxpayer group viewed all the listed offences, with the exception of the speeding and drug offences, as more serious than committing a tax offence. In contrast, the Tax Agent group considered only two offences (that are, drug and speeding offences) to be more serious than a tax offence. The remaining offences are considered to be comparatively less serious that a tax offence.

Whilst the Taxpayer sample's rating and ranking (refer to Tables 6.8 and 6.9 under the 'Taxpayer' column) of the offences appear to be similar (as expected), the rankings (refer to Table 6.9) given by the Tax Agent sample differed quite significantly from their ratings (refer to Table 6.8). Whilst the Tax Agent sample rated the tax offence as the least serious crime (in the rating exercise), it was nonetheless ranked as the third most serious offence (in the ranking exercise). This raises some issues in terms of how taxpayers' perceptions were measured in the past. The results seem to suggest that the method used to measure the perceived seriousness of tax noncompliance may potentially influence the outcome. Further tests are therefore required before the results can be generalised with confidence.

In summary, the results indicate that tax offences are generally not considered to be as serious as some other similar offences, and this perception may influence individuals' tax compliance beliefs and attitudes towards tax compliance behaviour. The next section examines the relationship between individuals' perceptions of the seriousness of tax noncompliance and their tax compliance behaviour.

6.8.3 Perceptions of Tax Offences and Tax Compliance Behaviour

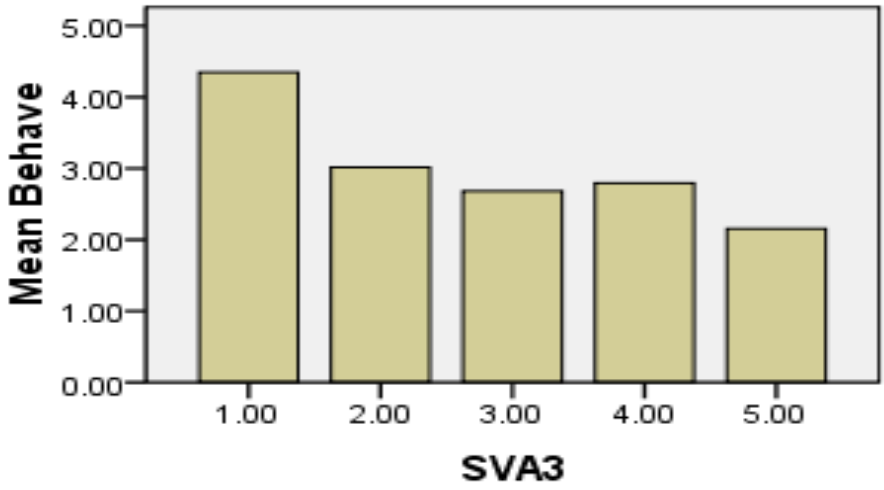
An additional analysis was carried out to determine whether the perceived severity (or seriousness) of committing a tax offence, has any influence on respondents' tax compliance behaviour. The results from the previous section indicate that tax offences are generally not considered to be as serious as some of the listed offences. Arguably, the perceived seriousness of tax offences may influence a person's compliance behaviour. That is, if people perceive committing a tax offence as generally not serious, then they are less likely to comply. Conversely, if people perceive committing a tax offence as serious, they are more likely to comply with their tax obligations.

The bar charts displayed in Figure 6.1 below show the influence of perceived seriousness of tax offences on tax compliance behaviour for the two sample groups. The vertical axis measures tax compliance behaviour, with a scale ranging from 1 (compliant) to 5 (not compliant), while the horizontal axis measures perceived severity of committing a tax offence (SVA3), using a similar scale ranging from 1 (not serious) to 5 (serious).

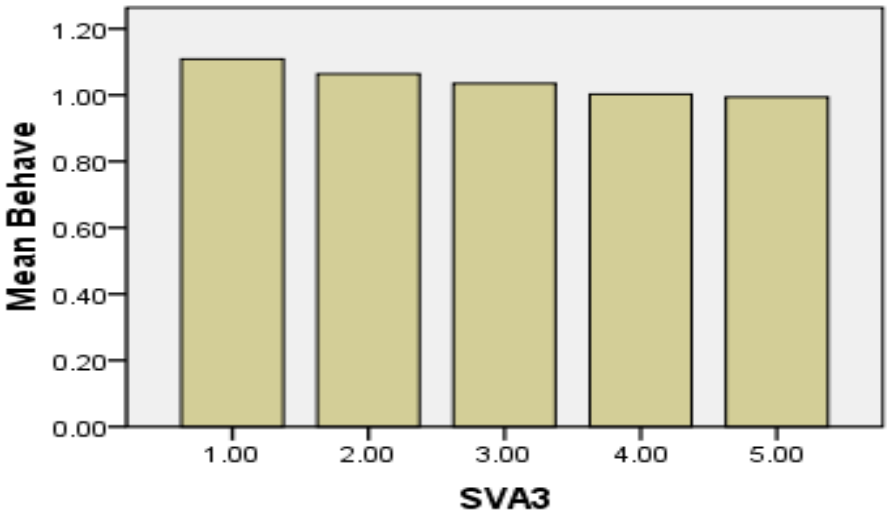
The results from both the Taxpayer and Tax Agent samples display a downward slope. This indicates that those who rate tax offences as not serious (score of 1) displayed comparatively higher non-compliant behaviour. In contrast, those who rated committing a tax offence as extremely serious (score of 5) appear to display more compliant behaviour. The above results suggest that taxpayers who consider tax noncompliance as a serious offence will be more compliant than those who consider tax noncompliance as less serious.

Figure 6.1: Influence of Perceived Severity on Compliance Behaviour

Severity (SVA3) on Behaviour (Behave) - Taxpayer Sample



Severity (SVA3) on Behaviour (Behave) - Tax Agent Sample



In summary, whilst Tax Agents may view the seriousness of tax noncompliance as only somewhat serious, this view has a marginal effect on their compliance behaviour. In contrast, the Taxpayers' perceptions of tax noncompliance appear to have a comparatively more pronounced effect on their tax compliance behaviour. Nonetheless, the results suggest that taxpayers' perception of the seriousness of committing a tax offence could influence their tax compliance behaviour. The next section presents the views of respondents who as taxpayers were subjected to penalties under the Compliance and Penalties Regime (CPR).

6.9 TAX NONCOMPLIERS' VIEWS

A further analysis was undertaken on respondents who have indicated being penalised under the current penalties regime (CPR). Their views on their experiences in dealing with the penalties regime are summarized in Table 6.10.

A total of 13 respondents (or 7 percent) from the Taxpayer sample and four respondents (or 2 percent) from the Tax Agent sample indicated having been penalised under the CPR. Despite the low numbers, the samples can still be reasonably considered to be representative of the population of taxpayers who were penalised under the regime. In 2006, the number of taxpayers in New Zealand was reported at 2.69 million,[138] whereas only 2,516 taxpayers were penalised for noncompliance,[139] suggesting that less than 1 percent of the New Zealand taxpaying population was penalised under the CPR.[140] Based on the percentages, both samples can be considered to adequately reflect the total population of taxpayers who have been penalised. The mean scores and standard deviations for the responses are presented in Table 6.10. The standard deviations are all inside the accepted threshold of ± 3 (Hair et al., 2006).

Generally, both samples seem to agree on the majority of issues, with regard to their experiences and views of being penalised. Both samples seem to agree that the penalties imposed were harsh, unfair and excessive in their case.[141] There was further agreement that the imposition of the penalties was not justified, and the economic and emotional costs were significant to the individuals.[142] Both parties were also unhappy with the process available for disputing the level of penalties imposed, and believed that the tax authority did not consider their views in determining the outcome of the dispute.[143] The results are consistent with a recent Australian study which found that the Australian taxpayers also believe that the penalties imposed were quite severe (Devos, 2009). The results further suggest that the perceived severity of the penalties imposed could influence taxpayers' future compliance behaviour (Devos, 2009).

[138] The reported taxpaying population in 2006 was 3,160,371, but after eliminating those who earned no income that year and those who did not state their income in the census form, the final figure was 2,694,432.

[139] Inland Revenue Annual Report, 2006.

[140] Using the average figures for the last eight years also yielded the same results, that is, less than 1 percent of the population was penalised under CPR.

[141] Statements 3, 8 and 10.

[142] Statements 1, 7 and 11.

[143] Statements 2 and 9.

Table 6.10: Means and Standard Deviation for Noncompliers

Views of Penalties Imposed (summarised)	**Taxpayer** (n=13)		**Tax Agent** (n=4)	
	Mean	Std Dev	Mean	Std Dev
1. The penalties imposed were justified.	5.53	1.50	5.00	2.44
2. My views were considered by IRD in determining the outcome.	4.61	1.70	5.00	2.44
3. Penalties imposed were harsh considering no one suffered as a result of the noncompliance.	2.61	2.06	3.75	2.21
4. My tax position was clearly explained to me during the process.	3.61	1.80	3.75	2.06
5. Penalties imposed have deterred me from future noncompliance.	3.38	1.93	2.50	1.29
6. The process required was simple and easy to follow.	4.61	2.02	3.75	2.36
7. The economic cost (time and money) of the process was significant.	2.84	1.86	3.00	1.82
8. The level of penalties imposed was relatively excessive.	2.38	2.02	2.75	1.70
9. Happy with the disputes process and level of penalties imposed.	4.46	1.61	5.25	2.06
10. Paying the tax shortfall, interest plus penalties was harsh and unfair.	2.76	2.08	2.75	2.06
11. Emotional cost of going through the process was significant.	2.69	1.75	3.50	1.73
Note: Lower scores indicate agreement with the statements, whereas higher scores indicate disagreement with the statements.				

On the other hand, respondents from both samples agree that their tax positions were well explained to them, and most importantly both parties agree that being penalised had deterred them from further noncompliance.[144] This is consistent with the outcome from a number of studies which demonstrated that penalties deter noncompliant behaviour (for example, Alm et al.,1995; and Fjeldstad & Semboja, 2001). In terms of ease and simplicity of the process, the Tax Agent sample found the disputes process simple and easy to follow, whereas the Taxpayer respondents disagreed with this statement.[145]

The preceding sections presented results of the preliminary analysis carried out on the survey data, and descriptive statistics for some study variables. The next section provides a summary of the results discussed in this chapter.

[144] Statements 4 and 5.

[145] Statement 6.

6.10 SUMMARY

This chapter presented the results of some preliminary analysis carried out on the survey data, which included analysing the survey response rate, developing respondents' profiles, and determining the representativeness of the observed sample to the population distribution. The response rates of 21 percent, 19 percent and 61 percent for each of the observed samples were considered to be acceptable for this research.[146] The number of useable responses is adequate for use in PLS-Graph, which was used to analyse the data, and for testing the hypotheses developed for this study.

A number of tests were applied, which included testing for nonresponse bias and determining the representativeness of the observed samples to their corresponding population distribution, which produced satisfactory results. The missing value analysis undertaken suggested that the missing data was MCAR and therefore suitable for any estimation methods. The EM technique was selected to address the missing data, because the EM algorithm was considered superior to other available method. Descriptive statistics were also carried out on selected study variables, to identify the effect of each variable on its corresponding constructs, or the comparative importance of each of these measures to their corresponding construct.

The results from taxpayers' perceptions of tax noncompliance indicate that, generally, most respondents consider tax noncompliance to be less serious than a number of other similar offences. The results also found perceived seriousness of tax noncompliance to influence tax compliance behaviour. Finally, the views and experiences of respondents who were subjected to the penalties regime were analysed. The results indicate a general dissatisfaction with a number of aspects relating to the penalties process. Nonetheless, there is general agreement that being penalised will deter them from future noncompliance. The next chapter presents the results from the assessments of the measurement and structural models.

[146] Although the Tax Lawyer sample achieved a response rate of 61 percent, the sample was removed from further analysis because the small sample size did not meet the required threshold for the application of PLS-Graph.

CHAPTER 7
RESULTS FROM MODEL EVALUATION

7.1 INTRODUCTION

This chapter presents the evaluation of the Partial Least Squares (PLS) research models which explains tax compliance behaviour. The models developed for this research are based on the Theory of Planned Behaviour (TPB), and examine the relationships of the elements of the TPB and other tax compliance variables, with behavioural intentions to perform certain behaviour, and its link to the actual behaviour. This chapter is set out in five sections.

The following section 7.2 presents the results from the evaluation of the measurement models (also referred to as the outer models). This is followed by section 7.3, which discusses the results from the assessment of the structural models (also referred to as the inner models). Section 7.4 links the results from the structural models to the hypotheses developed in Chapter 4, and discusses the outcomes for the Taxpayer and Tax Agents Models. Finally, section 7.5 provides a summary of this chapter.

7.2 MEASUREMENT MODEL RESULTS

Following the validation guidelines provided by various researchers (Straub et al., 2004; Chin, 2010; and Gotz et al., 2010), the measurement models were tested for indicator reliability (loadings), construct reliability (composite reliability), convergent validity (average variance extracted (AVE) analysis) and discriminant validity (square root of AVE and loadings and cross loadings analysis), by applying generally accepted decision rules. The results of these validity and reliability tests, which will provide a level of assurance that the survey items are measuring the constructs they are designed to measure, are presented in the following sections.

7.2.1 Indicator Reliability (Indicator Loadings)

Due to the exploratory nature of this study, the majority of measures used in developing the research models were newly created, while some measures were adopted from various other studies. Therefore, a large number of measures were used, especially for the Compliance and Penalties Regime (*CnP*) construct, with the expectation that many may not meet the required test. Further, no pilot test (normally used to refine a survey instrument) was undertaken for the current study, which further increased the expectation of a large number of measures not meeting the required test, and thus having to be eliminated.

Indicator reliability, which was described in Chapter 5, explains the extent to which a measure or a set of measures is consistent in respect of what it intends to measure. The reliability of one construct is independent of, and calculated separately from, that of other constructs (Urbach & Ahlemann, 2010). The PLS bootstrapping technique estimates item loadings and measurement errors along with their respective *t*-values (Gefen et al., 2000).

All measures were initially included in the research models and the reliability of individual indicators or measures were evaluated by examining the loadings of each measure. A commonly accepted threshold is to accept items with loadings of 0.707 or higher, which implies that there is more shared variance between the constructs and its measures than error variance (Chin, 1998a; Hulland, 1999; Barroso et al., 2010; and Gotz et al., 2010). Arguably, it is equally common to have several items in an estimated model having loadings measuring less than the prescribed 0.707 level; particularly when new items for newly developed scales are employed (Hulland, 1999; and Chin, 2010).

For this study, an item trimming process was undertaken simultaneously for both the Taxpayer and Tax Agent Models. Measures with very low loadings were removed one at a time, until most measures achieved reasonable loadings and a significant *t*-value at the 0.05 level. During this process, the indicators of a construct that was supposed to measure the fairness aspect of the penalties regime (comprising five indicators) displayed loadings that differed significantly between the two research models (Taxpayer and Tax Agent Models). In order to make a comparative analysis of the two models, both models will have to be identical. Consequently, this construct and its associated measures were removed because they did not meet the standard required.[147]

In addition to removing the above construct, further measures that did not meet the required standards were also eliminated. This is not unusual for studies using newly created measures. Albers (2010) reported instances where researchers eliminated 50 percent of measures developed for a particular research, due to low reliability. In this study, out of a total of 84 measures used, 23 measures were deleted at this stage (which is approximately 27 percent). The summarised results are in the following Table 7.1, which reports the loadings, and the significance of the *t*-values of each measure, for both sample groups. The research models were further refined by eliminating measures that fail to meet the loadings threshold level and the established significance level of 0.05 for its *t*-values. The refined research models are presented in Table 7.2. The outputs generated by the bootstrapping procedure, for

[147] To make a comparison of two models, the corresponding constructs should have identical indicators. If an indicator is not significant in one model, it should be removed from both models (Professor Wynne Chin, personal communication, November 3, 2009).

the final trimmed (or refined) Models, are presented in Appendix 7 for the Taxpayer Model and in Appendix 8 for the Tax Agent Model.

Table 7.1: Loadings After the First Trimming Process for the Measurement Models

Constructs and Items	Taxpayer			Tax Agent		
	Loadings	***t*-stat**	**Sig. Level**	**Loadings**	***t*-stat**	**Sig. Level**
Behaviour (BEHV)				**Behaviour (BEHV)**		
BEH1	0.944	55.683	0.001	0.888	3.723	0.001
BEH2	0.948	59.221	0.001	0.853	5.060	0.001
Behavioural Intention (BI)				**Behavioural Intention (BI)**		
BI 1	0.705	11.539	0.001	0.794	18.560	0.001
BI 2	0.895	35.850	0.001	0.890	27.430	0.001
Attitude 1 (Non-Legal) (ATT1)				**Attitude 1 (Non-Legal) (ATT1)**		
MORAL	0.824	30.499	0.001	0.886	40.692	0.001
CIVIC	0.829	30.316	0.001	0.723	11.454	0.001
GUILT	0.789	22.247	0.001	*0.522*	4.538	0.001
Attitude 2 (Legal) (ATT2)				**Attitude 2 (Legal) (ATT2)**		
COPun	*0.513*	3.885	0.001	*0.599*	3.420	0.001
SOPun	0.883	29.145	0.001	0.752	6.027	0.001
CODet	0.882	28.592	0.001	0.904	8.1905	0.001
Subjective Norm (SNORM)				**Subjective Norm (SNORM)**		
SNORM1	0.883	35.379	0.001	0.769	10.276	0.001
SNORM2	0.801	14.060	0.001	0.777	11.825	0.001
SNORM3	0.*668*	8.239	0.001	0.843	18.161	0.001
Perceived Behavioural Control (PBC)				**Perceived Behavioural Control (PBC)**		
PBC1	0.929	97.402	0.001	0.950	8.374	0.001
PBC2	0.835	20.461	0.001	0.491	1.970	0.010
PBC3	0.845	29.619	0.001	0.731	4.230	0.001
Procedural Justice of CnP Regime (CnP)				**Procedural Justice of CnP Regime (CnP)**		
CnP1	0.656	8.454	0.001	0.735	6.802	0.001
CnP2	0.703	11.389	0.001	0.769	6.540	0.001
CnP3	0.826	18.855	0.001	0.753	4.599	0.001
CnP4	0.859	28.414	0.001	0.799	5.657	0.001
CnP5	0.709	12.163	0.001	0.590	2.534	0.001
CnP6	0.642	8.220	0.001	0.659	5.163	0.001
Prevalence of Compliance (OTHERS)				**Prevalence of Compliance (OTHERS)**		
OTH1	0.832	22.743	0.001	0.627	4.350	0.001
OTH3	0.645	7.223	0.001	0.453	2.610	0.010
OTH4	0.676	10.419	0.001	0.757	6.020	0.001
OTH5	0.694	11.561	0.001	0.877	10.270	0.001
OTH11	Delete	Delete	Delete	Delete	Delete	Delete
Effectiveness of the CnP Regime (CnPeff)				**Effectiveness of the CnP Regime (CnPeff)**		
CnPeff1	0.500	1.832	0.050	0.573	2.234	0.010
CnPeff2	0.927	12.549	0.001	0.850	8.109	0.001
CnPeff3	0.699	3.708	0.001	0.894	8.142	0.001
Tax Authority (TXAU)				**Tax Authority (TXAU)**		
TXAU1	0.671	10.813	0.001	0.480	2.768	0.001
TXAU2	0.857	31.958	0.001	0.674	4.235	0.001
TXAU3	0.783	13.673	0.001	0.812	6.505	0.001
TXAU4	0.719	10.095	0.001	0.604	4.402	0.001
TXAU5	0.858	27.837	0.001	0.689	4.161	0.001
TXAU6	0.786	15.324	0.001	0.618	4.353	0.001
Tax System (TXSY)				**Tax System (TXSY)**		
TXSY1	Delete	Delete	Delete	Delete	Delete	Delete
TXSY2	0.784	4.041	0.001	-0.653	2.340	0.010
TXSY3	Delete	Delete	Delete	Delete	Delete	Delete
TXSY4	0.548	2.596	0.001	0.870	5.034	0.001
Social Distance from Tax Authority (DST)				**Social Distance from Tax Authority (DST)**		
DSTa DST6	0.738	4.272	0.001	0.938	2.790	0.001
DSTa DST7	0.911	7.771	0.001	0.723	2.129	0.010
DSTb DST12	0.909	13.076	0.001	0.999	3.451	0.001
DSTb DST13	0.909	14.445	0.001	0.606	2.179	0.025
DSTc DST5	0.852	7.510	0.001	0.823	3.183	0.001
DSTc DST8	0.879	9.835	0.001	0.894	5.435	0.001
DSTd DST10	0.661	4.498	0.001	0.616	3.369	0.005
DSTd DST11	0.895	14.381	0.001	0.931	4.406	0.001

Table 7.2: Loadings for the Final Trimmed Measurement Models

Constructs and Items	Taxpayer			Tax Agent		
	Loadings	**T-stat**	**Sig. Level**	**Loadings**	**T-stats.**	**Sig. Level**
Behaviour (BEHV)				**Behaviour (BEHV)**		
BEH1	0.944	56.657	0.001	0.888	3.735	0.001
BEH2	0.948	59.888	0.001	0.853	6.296	0.001
Behavioural Intention (BI)				**Behavioural Intention (BI)**		
BI 1	0.705	11.924	0.001	0.794	17.542	0.001
BI 2	0.895	38.381	0.001	0.890	28.491	0.001
Attitude 1 (Non-Legal) (ATT1)				**Attitude 1 (Non-Legal) (ATT1)**		
MORAL	0.824	33.101	0.001	0.886	40.420	0.001
CIVIC	0.829	30.453	0.001	0.723	12.071	0.001
GUILT	0.789	20.288	0.001	*0.522*	4.876	0.001
Attitude 2 (Legal) (ATT2)				**Attitude 2 (Legal) (ATT2)**		
COPun	*0.513*	4.017	0.001	*0.599*	3.698	0.001
SOPun	0.883	28.590	0.001	0.752	5.525	0.001
CODet	0.882	30.490	0.001	0.904	7.871	0.001
Subjective Norm (SNORM)				**Subjective Norm (SNORM)**		
SNORM1	0.883	35.950	0.001	0.769	10.522	0.001
SNORM2	0.801	14.735	0.001	0.777	11.905	0.001
SNORM3	*0.668*	8.522	0.001	0.843	19.378	0.001
Perceived Behavioural Control (PBC)				**Perceived Behavioural Control (PBC)**		
PBC1	0.929	95.163	0.001	0.950	6.245	0.001
PBC2	0.835	22.477	0.001	0.491	1.972	0.010
PBC3	0.845	29.461	0.001	0.731	4.369	0.001
Procedural Justice of CnP Regime (CnP)				**Procedural Justice of CnP Regime (CnP)**		
CnP1	0.656	8.206	0.001	0.735	6.107	0.001
CnP2	0.703	10.652	0.001	0.769	6.406	0.001
CnP3	0.826	21.504	0.001	0.753	4.362	0.001
CnP4	0.859	30.886	0.001	0.799	5.412	0.001
CnP5	0.709		0.001	0.590		0.001
CnP6	0.642	8.816	0.001	0.659	4.761	0.001
Societal Norm (OTHERS)				**Societal Norm (OTHERS)**		
OTH1	0.832	21.846	0.001	0.627	4.320	0.001
OTH3	0.645	7.326	0.001	0.453	2.412	0.010
OTH4	0.676	10.094	0.001	0.757	6.623	0.001
OTH5	0.694	12.006	0.001	0.877	14.229	0.001
Effectiveness of the CnP Regime (CnPeff)				**Effectiveness of the CnP Regime (CnPeff)**		
CnPeff1	0.500	1.830	0.05	0.573	2.449	0.010
CnPeff2	0.927	12.314	0.001	0.850	10.366	0.001
CnPeff3	0.699	3.840	0.001	0.894	9.618	0.001
Tax Authority (TXAU)				**Tax Authority (TXAU)**		
TXAU1	0.671	11.001	0.001	0.480	2.842	0.001
TXAU2	0.857	32.102	0.001	0.674	3.943	0.001
TXAU3	0.783	14.664	0.001	0.812	8.012	0.001
TXAU4	0.719	10.192	0.001	0.604	4.512	0.001
TXAU5	0.858	29.055	0.001	0.689	3.997	0.001
TXAU6	0.786	15.741	0.001	0.618	4.265	0.001
Tax System (TXSY)				**Tax System (TXSY)**		
TXSY2	0.784	3.762	0.001	-0.653	2.295	0.010
TXSY4	0.548	2.576	0.001	0.870	4.870	0.001
Social Distance from Tax Authority (DST)				**Social Distance from Tax Authority (DST)**		
DSTa DST6	0.738	4.510	0.001	0.938	2.643	0.001
DSTa DST7	0.911	8.891	0.001	0.723	2.187	0.010
DSTb DST12	0.909	15.142	0.001	0.999	3.505	0.001
DSTb DST13	0.909	16.394	0.001	0.606	2.167	0.025
DSTc DST5	0.852	7.104	0.001	0.823	3.229	0.001
DSTc DST8	0.879	12.368	0.001	0.894	5.129	0.001
DSTd DST10	0.661	4.767	0.001	0.616	3.370	0.005
DSTd DST11	0.895	14.118	0.001	0.931	4.106	0.001

The loadings of all indicators in the Final Trimmed Models were examined to assess the indicators' reliability. A cut-off point of 0.5 was set for the loadings subject to these measures achieving significant *t*-values of at least 0.05.[148] Most of the measures or indicators' loadings values were above the threshold of 0.5 set for this study, with all achieving significant *t*-values.

Examining the loadings for each of the 15 constructs for the Taxpayer Model, 33 variables out of 48 variables displayed loadings of over 0.70 as prescribed by Chin (1998), and achieved significance at the 0.05 level. In terms of the remaining variables (all significant at the p = < 0.05 significance level), nine measures displayed loadings of over 0.60, and three measures reported loadings of over 0.50. These loadings can be accepted, if there are other measures reflecting the same construct (Chin, 1998b). These measures were therefore retained in the Taxpayer Model, on the basis that each of the measure's associated construct had multiple measures, and achieved significance at the p = < 0.05 level. Three measures (*OTH11, TXSY1* and *TXSY3*) were deleted due to either an extremely low loading and/or for not achieving the required threshold significance level of p = < 0.05.

In terms of the Tax Agent Model, 29 measures out of 48 met the generally accepted loadings threshold of 0.707 (Chin, 1998b). Thirteen measures, all achieving significant *t*-values at the p = < 0.05 level, had loadings of either over 0.60 or over 0.50. Consistent with the approach adopted for the Taxpayer Model, these measures were retained on the basis that each of these measures had achieved the required significance level (value), and also because the constructs to which these measures were assigned to had multiple measures (Chin, 1998b). Another three measures, *PBC2, OTH3* and *TXAU1*, had loadings that were marginally below 0.50 and were considered for elimination. Further examination revealed that despite the marginal loadings scores, all three variables had achieved significant *t*-values at the p = < 0.05 level. Two of these three measures were considered critical to the model (*PBC2* and *OTH3*).

Several researchers have argued about the merits of applying stringent standards in the early stages of scale development (Chin, 1998b) and when scales are applied across different contexts (Barclay et al., 1995). Past studies, in some instances, have retained low loadings of 0.40 and under (Fornell et al., 1990; and Johansson & Yip, 1994). Chin (1998b) advised against eliminating measures with low loadings where the measures are important to the construct. In terms of the current study, Professor Wynne Chin[149] suggested retaining all three

[148] Bagozzi and Yi (1988) suggested that a composite reliability greater than 0.6 is desirable and that individual item reliability will be lower than the composite.

[149] Professor Wynne Chin, personal communication, November 3, 2009.

measures, provided these measures satisfy the discriminate validity test.[150] Further, in view of the fact that the majority of items returned loadings of greater than 0.707, and the average variance extracted (AVE) of these three measures returned acceptable scores for each of the associated constructs, these measures were considered to be reliable measures of their corresponding constructs. These three measures were therefore retained, and were subjected to further analysis to justify their continued retention. The final trimmed model is presented in Table 7.2.

To sum up, the majority of the measures for both models exceeded the more stringent cut-off threshold of 0.707, which implies that more than 50 percent of the variance in the observed variable is shared with the construct (Barclay et al., 1995). The remaining measures were retained on the basis that the loadings satisfied Chin's (1998b) recommendation of accepting loadings of 0.6 and 0.5, for measures that are part of a multi-indicator construct; and also on the basis that all these measures have significant t-values at the $p = < 0.05$ level. Three measures with loadings marginally below 0.5, from the Tax Agent Model, were eliminated in the above process, reducing the measures used in the final model from 48 to 45. The same measures were also subsequently removed from the Taxpayer Model.

Whilst most of the items loadings were within the accepted threshold; measures with lower loading, which at this stage have been retained, will be subject to further tests (discriminant validity test), which will determine whether these lower scoring measures should still be retained or eliminated.[151] The next step is to assess the internal consistency of each construct, which is presented in the next section.

7.2.2 Construct Reliability (Composite Reliability)

Construct reliability was discussed in Chapter 5. The construct reliability, which fulfils the same task as Cronbach's alpha, allows the evaluation of the extent to which a variable or a set of variables is consistent with what it intends to measure (Straub et al., 2004). Construct reliability was examined using the composite reliability index which ranges from 0 (indicating completely unreliable) to 1 (indicating perfectly reliable). All values larger than 0.6 are considered to be acceptable (Bagozzi & Yi, 1988; Dibbern & Chin, 2005; Gotz et al., 2010; and Urbach & Ahlemann, 2010).

The composite reliability values, generated by the bootstrapping procedure of PLS-Graph, are presented in Table 7.3 for both the Taxpayer and the Tax Agent Models. The values for

[150] Professor Wynne Chin, personal communication, November 3, 2009.
[151] Professor Wynne Chin, personal communication, November 3, 2009.

the Taxpayer Model ranged from 0.62 to 0.94, with the majority of the scores in the 0.8 range. In terms of the Tax Agent Model, the composite reliability values ranged from 0.74 to 0.86, with the majority of scores again being in the 0.8 range.

The results displayed in Table 7.3 clearly indicate that all composite reliability indices for all constructs used in the research model exceeded the acceptable threshold of 0.6. Construct reliability has therefore been established for both the Taxpayer and Tax Agent Models. The next step is to assess convergent validity of the measurement models.

Table 7.3: Composite Reliability (CR) and Average Variance Extracted (AVE) Coefficients

Constructs	Taxpayer		Tax Agent	
	Composite Reliability	**Average Variance Extracted**	**Composite Reliability**	**Average Variance Extracted**
BEHV	0.944	0.895	0.862	0.758
BI	0.785	0.649	0.831	0.712
ATT1	0.855	0.663	0.762	0.527
ATT2	0.817	0.610	0.802	0.581
SNORM	0.830	0.622	0.839	0.635
PBC	0.904	0.758	0.781	0.559
OTHERS	0.806	0.512	0.781	*0.485*
TXSY	0.620	*0.457*	0.740	0.592
TXAU	0.904	0.612	0.814	*0.427*
CnP	0.872	0.533	0.862	0.513
CnPeff	0.763	0.532	0.824	0.616
DSTa	0.813	0.687	0.822	0.701
DSTb	0.905	0.826	0.803	0.682
DSTc	0.857	0.749	0.849	0.738
DSTd	0.760	0.619	0.760	0.623

7.2.3 Convergent Validity (Average Variance Extracted or AVE)

In order to satisfy the convergent validity test, it is necessary to ensure that the measures or items share more variance with its measures than with other constructs in the model (Fornell & Larcker, 1981). The AVE, which attempts to measure the amount of variance that a latent variable captures from its indicators relative to the amount due to measurement error, is commonly used to measure convergent validity of reflective measures (Fornell & Larcker, 1981; Chin, 1998b; and Gotz et al., 2010).

While a universally accepted threshold for this measure is yet to be determined, an AVE of at least 0.50 is considered acceptable (Gefen & Straub, 2005; and Hair et al., 2006). This would indicate that 50 percent or more of the indicator variance has been accounted for. AVEs are generated automatically by the bootstrap technique by PLS-Graph. The results of the AVE analysis are presented in Table 7.3 above.

Table 7.3 reports that most of the average variances extracted by the measures range above the acceptable level of 0.5 (Fornell & Larcker, 1981), with only three constructs demonstrating values that are marginally below the 0.5 threshold. Most of the constructs in the Taxpayer Model have AVE values ranging from 0.51 to 0.89, with only one construct (*TXSY*) displaying a value of 0.46, which is only marginally below the acceptable threshold. In terms of the Tax Agent Model, most of the constructs in the model have AVE values ranging from 0.51 to 0.75, with the exception of two constructs having AVE values measuring below the acceptable threshold. These are *OTHERS* (0.48) and *TXAU* (0.42) which are marginally below the acceptable threshold.

Professor Wynne Chin supports AVE measures of under 0.5 as long as the composite reliability and discriminant validity are established for the particular constructs and its group of indicators.[152] Duarte and Raposo (2010) retained a construct with an AVE value of 0.361 on the basis that the composite reliability and discriminant validity were both at the acceptable level. Based on this, the three constructs identified previously as having AVE scores of marginally under 0.5 (or over 0.4) have been retained in the models, given that the composite reliability requirements were met for each of these constructs (but their final retention in the models will depend on these constructs also establishing discriminant validity).

Convergent validity has therefore been established for both the Taxpayer and Tax Agent Models. The next step is to assess discriminant validity of the measurement models.

7.2.4 Discriminant Validity

Following the successful reliability assessment of the measurement models, discriminate validity of the measurement models was next assessed. Discriminant validity which can be evaluated by comparing the square root of AVEs of the constructs and the correlations among the constructs (loadings and cross loadings) was discussed in Chapter 5.

Discriminant validity, which indicates the extent to which a given construct is different from other constructs in the model, is established when each measurement item correlates weakly with all other constructs except for the one to which it is theoretically associated (Gefen & Straub, 2005). Discriminant validity was assessed in two ways. The first method involved comparing the square root of the AVE values, which is the average variance shared between a construct and its measures, with the correlations among constructs. The second method involved examining the loadings and cross loadings matrix, in order to ensure that no

[152] Professor Wynne Chin, personal communication, November 3, 2009.

indicators load more highly on other constructs in the model than they do on their theoretically assigned construct, and all constructs load higher on their assigned measures than on measures from other constructs.

(a) Square Root of Average Variance Extracted

As discussed in the previous paragraph, the first approach for establishing discriminate validity is an appropriate AVE analysis (Fornell & Larcker, 1981; and Gefen & Straub, 2005). AVE scores were generated by the bootstrap procedure of PLS-Graph. The square root of the AVE is calculated from this, and inserted in the correlation matrix table also generated by the bootstrap technique. The square root of the AVE of each construct should be greater than the correlation coefficient of the construct and all other constructs in the model (Fornell & Larcker, 1981; and Gefen & Straub, 2005). Equally important is for the AVE value to achieve the acceptable threshold of 0.50 (Fornell & Larcker, 1981; Chin, 1998; and Hair et al., 2006).

Appendix 11 and Appendix 12 present the correlation matrix for the Taxpayer and Tax Agent Models, respectively. The second column in each table reports the AVE scores generated from the bootstrapping procedure, with the calculated square root of the AVE presented in the diagonal figures in bold text.

The correlation tables were examined in order to compare the square roots of the AVE scores of each construct (that is, the diagonal values in bold) to the correlations of this construct and all the other constructs (that is, the off-diagonal elements). It has been established in a previous section that all the AVE scores for the Taxpayer and the Tax Agent Models were either over the accepted threshold of 0.50, or marginally below this threshold, and therefore considered still acceptable. The correlation matrices for the Taxpayer and Tax Agent Models further report the diagonal elements or values (which are the square root of each construct's AVE) to be significantly greater than the off-diagonal elements in the corresponding rows and columns. A square root of AVE larger than the square of the correlations among the constructs (or latent variables) indicates that more variance was shared between the construct and its block of indicators, than with another component representing a different block of indicators. In other words, the results confirmed that each measure is not tapping into different concepts; rather, it provides confirmation that each construct correlates more strongly to its own measures than to others. For adequate discriminant validity, the measures should be greater than the variance shared between the construct and other constructs in the model. The results therefore suggest satisfactory discriminant validity.

While some studies establish discriminant validity by only conducting the square root of the AVE analysis (Cool et al., 1989; Ruiz et al., 2010; and Streukens et al., 2010), other studies added a further test (loadings and cross loadings analysis) to that of the AVE analysis (see Barclays et al., 1995; Chin, 1998b; Hulland, 1999; and βow-Thies et al., 2010). For the purposes of this research, both tests were applied in an attempt to increase the robustness of the discriminant validity test.

(b) Loadings and Cross Loadings Analysis

The second test for assessing discriminant validity involved examining the loadings and cross loadings of measures. Cross loadings were obtained by correlating each construct's scores with all the other measures. The constructs' scores were obtained from the bootstrap technique of PLS-Graph (from Appendices 9 and 10) and copied to SPSS, together with the original data for each sample (Gefen & Straub, 2005). The cross loadings were then obtained by correlating each construct's scores with all the other measures used in the Taxpayer and Tax Agent Models.

The criterion applied for cross validating items is that the loadings of each measure must be larger on its designated construct than on any other constructs; and each of the constructs must load highest with its own measures. This is consistent with a large number of studies (Barclay et al., 1995; Schwarz & Schwarz 2007; Chin, 1998b; Chin, 2010; and Urbach & Ahlemann, 2010).

The cross loadings were examined by scanning across all measures in each row, in order to determine whether each measure related more strongly to its intended construct's column than to any other construct's column. The results (not presented in this study) show that all measures loaded higher on their intended construct than with any other construct. The only exception to this was the *CnP5* measure, which appears to load higher on the *DSTc* construct (0.623) than on its designated *CnP* construct (0.590). Consistent with Chin (1998b), this indicator was eliminated, because it is unclear which construct or constructs *CnP 5* is actually reflecting (that is, *CnP* or *DSTc*).

To examine the loadings, each column was scanned to determine whether each construct loaded highest with its own measures or whether it also loaded highest in measures belonging to other constructs. This is to ensure that all constructs share more variance with their own measures than with others. It was observed that all constructs loaded highest in the measures or indicators assigned to it, for both the Taxpayer and Tax Agent Models. The only exception was the measures for the *ATT1* construct. The *ATT1* construct loaded highest in two out of

three of its corresponding measures. A third measure, *Guilt,* loaded slightly lower (0.522) than another measure, *BI2* (0.567), assigned to the Behavioural Intent (*BI*) construct, thereby requiring further scrutiny. However, on examining the questions relating to these measures, it became quite clear that these two measures are distinct. One refers to feelings of guilt, whereas the other measures an action or intention. On that basis, it may be plausible to suggest that the marginal cross loadings can be attributed to 'noise' (Chin, 1998b) and therefore retained in the model. This approach is consistent with Swart and Swart (2007) who also retained measures that loaded below measures that were not assigned to a particular construct. Further, both of these measures are critical to the research model, and the AVE analysis indicated no problems with discriminant validity, in respect of these two measures.

As a result of eliminating the *CnP* measure, the whole process of testing for discriminate validity using the loadings and cross loadings was repeated for both the Taxpayer and Tax Agent Models. The results are displayed in Appendices 13 and 14 for the Taxpayer Model and the Tax Agent Model, respectively. The tables present the comparison of each indicator or measure to its intended construct (that is, loadings) and to all other constructs (that is, cross loadings).

Going across each row, all measures now load higher with their intended constructs; and going down each construct column, all measures assigned to a particular construct displays higher loadings than measures relating to other constructs.[153] This outcome suggests that each measure loads more highly on the construct it attempts to reflect than on other constructs, and that all constructs share more variance with their assigned measures than with measures assigned to other constructs (Chin, 2010).

This satisfies the second discriminant validity test and indicates that discriminant validity at the indicator level is adequate. Further, it was noted that the constructs *TXSY* (Taxpayer), and *OTHERS* (Societal Norms) and *TXAU* (Tax Agent) that previously reported AVE scores that were marginally below the commonly accepted threshold of 0.5 for the convergent validity test passed the current test and the decision to retain these has been justified.[154].

Collectively, the results presented above provide support for the overall quality of the final measures used in this study. The statistics suggest that the component measures are reliable, are internally consistent, and have convergent and discriminant validity. The measurement models are therefore acceptable for further analysis, and the next section presents the results of the evaluation of the structural models.

[153] Except for the *ATT1* construct which has already been accepted.

[154] Professor Wynne Chin, personal communication, November 3, 2009.

7.3 STRUCTURAL MODEL RESULTS

After validating the measurement models, the structural models were evaluated to provide evidence to support the theoretical model developed for this study. Each of the structural models illustrates the relationships between constructs or latent variables that were hypothesised in the theoretical model or TPB Model and presented in Chapter 4. The main objective of the PLS model is prediction and, therefore, the goodness of fit of the current theoretical models was established by the strength of each structural path and the combined predictiveness (R^2) or strength of the variance of its exogenous constructs (Chin, 1998b). Further, the bootstrapping resampling procedures were applied to examine the stability of estimates.

A bootstrap re-sampling procedure with 1,000 sub-samples, was run in PLS-Graph for each sample group, generating scores representing the strength of the variances (R^2) and the path coefficients, together with the *t*-values used to assess the significance levels of the PLS estimates. The full partial least square bootstrapping outputs for both groups are presented in Appendix 7 (Taxpayer Model) and Appendix 8 (Tax Agent Model). The full PLS graphic outputs, which show all individual measures associated with each construct, are displayed in Appendices 15 and 16 for the Taxpayer and Tax Agent Models, respectively. Concise PLS graphic outputs, also generated by the bootstrap resampling technique, are presented as Figures 7.1 and 7.2 for the Taxpayer and Tax Agent Models, respectively. Finally, a global goodness of fit index was also computed manually for each sample, to determine the overall adequacy of the Taxpayer and Tax Agent Models (Tenenhaus et al, 2004).

Figure 7.1: Summarised PLS Output (Taxpayer Model)

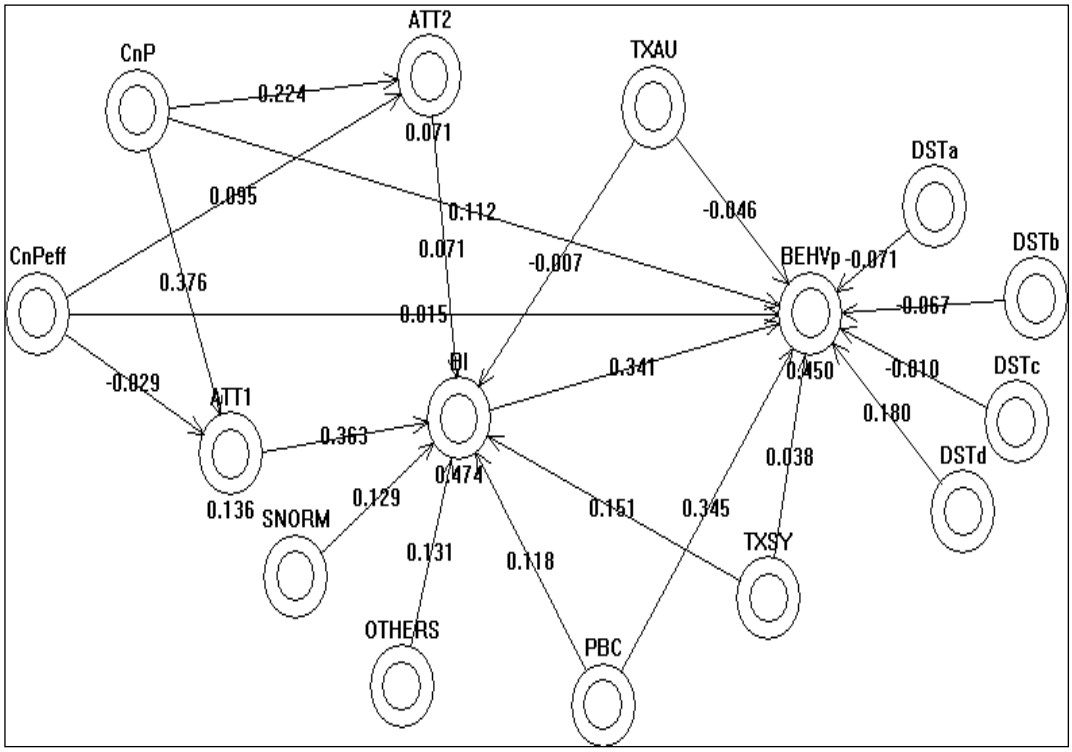
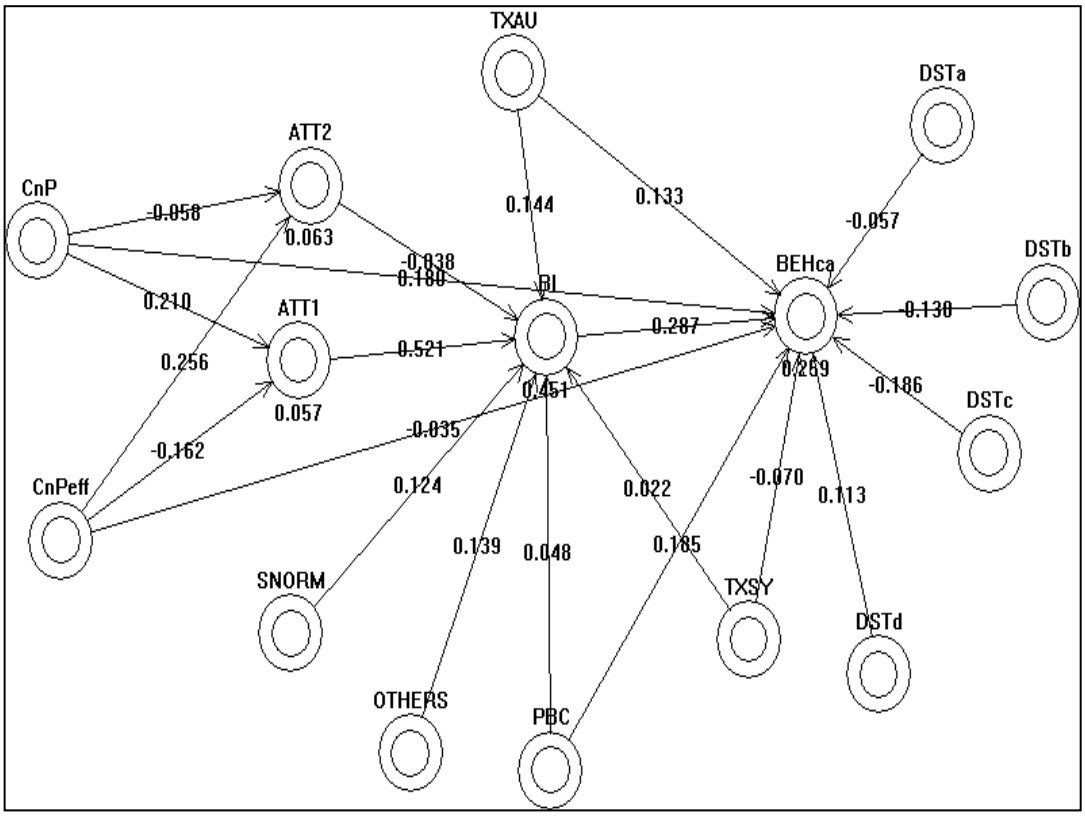


Figure 7.2: Summarised PLS Output (Tax Agent Model)



7.3.1 Variance Explained (R^2)

As discussed in Chapter 5, the predictive power of the PLS structural model is assessed by the endogenous constructs' R^2 scores, which indicates the amount of the constructs' variance explained (Barclay et al., 1995; and Hair et al., 2006). Therefore, the initial step in the evaluation of the structural models involved determining the ability of each model to explain the variance in each dependent variable. The dependent or exogenous variables are *BEHV (*behaviour), *BI* (behavioural intent), *ATT1* (attitude based on non-legal sanctions) and *ATT2* (attitude based on legal sanctions). The R^2 values for each of the endogenous constructs generated by the bootstrapping technique, and graphically displayed in Figures 7.1 and 7.2 for the Taxpayer and Tax Agent Models, respectively, are summarised in Table 7.4.

Table 7.4: Variance Explained (R^2Values)

Construct	R^2 (Taxpayer Model)	R^2 (Tax Agent Model)
BEHV (Behaviour)	0.450	0.259
BI (Behavioural Intent)	0.474	0.451
ATT1 (Non-Legal Sanctions)	0.136	0.057
ATT2 (Legal Sanctions)	0.071	0.063

(a) The R^2 of Behaviour (*BEHV*)

The variance explained or the R^2 for the *BEHV* construct for both the Taxpayer and Tax Agent Models are displayed in Table 7.4. The R^2 of 0.450 for the Taxpayer Model and 0.259 for the Tax Agent Model, both measured greater than the minimum threshold of 0.1.[155] This indicates that the direct effect of the *BI, TXAU, TXSY, PBC, CnP, CnPeff* and all *DST* constructs, together with the indirect effect of *ATT1, ATT2, SNORM, OTHERS, PBC, TXSY,* and the *TXAU* constructs, accounted for 45 percent of the variance of the *BEHV* construct for the Taxpayer Model. Similarly, the direct and indirect effect of these same constructs in respect of the Tax Agent Model accounted for 26 percent of the variance of the *BEHV* construct.

The R^2 results of the Taxpayer Model indicate reasonable predictive power, and suggest the existence of a combined effect of all the independent constructs (mentioned above) on the

[155] A number of researchers argue that the variance explained or R^2 for endogenous variables or constructs should be greater than 0.1 (Falk & Miller, 1992; Hanlon, 2001; and Santosa et al., 2005). Further, Backhause et al., (2003) argue that no generalisable statement can be made about an acceptable threshold of R^2, adding that whether this determination coefficient is deemed acceptable or not depends on the individual study (quoted in Gotz et al., 2010).

dependent construct *BEHV* (behaviour) in the structural model. The R^2 of 0.259 for the Tax Agent Model indicates a moderate level of predictiveness.

(b) The R^2 of Behavioural Intent (*BI*)

The R^2 for the *BI* construct, as displayed in Table 7.4, measured 0.474 for the Taxpayer Model, and 0.451 for the Tax Agent Model; with both exceeding the acceptable threshold of 0.1. The direct effect of the *ATT1*, *ATT2*, *SNORM*, *OTHERS*, *PBC*, *TXSY*, and the *TXAU* constructs, together with the indirect effect of the *CnP* and *CnPeff* constructs accounted for 47 percent of the variance of the *BI* construct for the Taxpayer Model. Similarly, the direct and indirect effects of these same constructs relating to the Tax Agent Model, accounted for 45 percent of the variance of the *BI* construct for the Tax Agent Model.

The comparatively high R^2 values of the *BI* (behavioural intent) constructs for both the Taxpayer and Tax Agent Models indicate strong predictive powers. This indicates the existence of a combined effect of all the independent constructs (listed above) on the dependent construct *BI* (behavioural intent) in the Structural Model.

(c) The R^2 of Attitudes (*ATT1* and *ATT2*)

Table 7.4 also displays the R^2 values of the two attitude constructs (*ATT1* and *ATT2*) for both the Taxpayer and Tax Agent Models. Unfortunately, only the R^2 value in respect of the Taxpayer Model, measuring 0.136, adequately satisfied the acceptable threshold of 0.1. This suggests that the *CnP* and *CnPeff* constructs accounted for 14 per cent of the variance in the *ATT1* construct. The R^2 values of *ATT2* in respect of the Taxpayer Model, and the R^2 values of both *ATT1* and *ATT2* in respect of the Tax Agent Model measured well below the acceptable threshold, displaying values of 0.071, 0.057, and 0.063, respectively.

In summary, the Taxpayer Model accounted for substantial variances in *BI* (R^2 = 0.47) and *BEHV* (R^2 = 0.45); modest variances in *ATT1* (R^2 = 0.136); and marginal variances in *ATT2* (R^2 = 0.07). The Tax Agent Model on the other hand, accounted for substantial variances in *BI* (R^2 = 0.45); modest variances in *BEHV* (R^2 = 0.26), and marginal variances in *ATT1* (R^2 = 0.06) and *ATT2* (R^2 = 0.06). Overall, the results indicate the predictive capacity of both models. The next section presents the results of the effect size for each endogenous construct.

7.3.2 Effect Size

In addition to determining the significance of the constructs in the two models, it is equally important to determine whether a predictor variable has a substantive influence on the dependent variable. This can be assessed by examining the effect size (f^2). The application of effect size is explained in Chapter 5. The change in the determination coefficient will indicate whether an independent latent variable has a substantial influence on the dependent latent variable. Table 7.5 reports the effect size in respect of the exogenous constructs in both models.

Table 7.5: Effect Size in the Structural Models

Construct Excluded	Taxpayer Model				Tax Agent Model			
	$R^2_{excluded}$	f^2	Degree of effect (Rating)	*F* test	$R^2_{excluded}$	f^2	Degree of effect (Rating)	*F* test
BEHV R^2 = 0.450					**BEHV R^2 = 0.259**			
BI	.377	0.073	small	****	.199	0.080	small	****
PBC	.368	0.082	small	****	.229	0.040	small	****
TXAU	.449	0.001	*none*	*n/s*	.249	0.013	*none*	*
CnP	.444	0.026	small	****	.239	0.026	small	****
CnPeff	.450	0.000	*none*	*n/s*	.258	0.001	*none*	*n/s*
TXSY	.449	0.001	*none*	*n/s*	.256	0.004	*none*	*n/s*
DSTa	.447	0.003	*none*	*n/s*	.256	0.004	*none*	*n/s*
DSTb	.448	0.003	*none*	*n/s*	.248	0.014	*none*	*
DSTc	.450	0.000	*none*	*n/s*	.250	0.012	*none*	*n/s*
DSTd	.429	0.038	small	****	.243	0.021	small	***
BI R^2 = 0.474					**BI R^2 = 0.451**			
ATT1	.400	0.140	small	****	.226	0.225	medium	****
ATT2	.471	0.005	*none*	*n/s*	.450	0.001	*none*	*n/s*
SNORM	.456	0.034	small	****	.440	0.020	small	***
PBC	.456	0.034	small	****	.449	0.003	*none*	*n/s*
OTHERS	.463	0.020	small	****	.434	0.030	small	***
TXAU	.474	0.000	*none*	*n/s*	.431	0.036	small	****
TXSY	.456	0.034	small	****	.450	0.001	*none*	*n/s*
ATT1 R^2 = 0.136					**ATT1 R^2 = 0.057**			
CnP	.006	0.130	small	****	.015	0.042	small	****
CnPeff	.135	0.001	*none*	*n/s*	.032	0.025	small	****
ATT2 R^2 = 0.071					**ATT2 R^2 = 0.063**			
CnP	.026	0.045	small	****	0.059	0.004	*none*	*n/s*
CnPeff	.063	0.008	*none*	*n/s*	.001	0.069	small	****

Note: Significance levels of Pseudo F test: n/s = not significant; * 0.5, **0.02, ***0.01, ****0.001

As discussed in the previous chapter, the effect of each independent construct on the four endogenous constructs was obtained by removing each of the independent variables one at a time, creating 21 sub-models for each group. Consistent with Cohen and Cohen (1983), when

a set of explanatory variables is added to a multiple regression model, the effect size (f^2) of 0.02, 0.15 and 0.35 reflects small, medium and large effects, respectively, at the structural level. In order to determine whether the size of the effect is significant, a pseudo *F* test for testing the significance of the f^2 statistics with 1 and n-k degrees of freedom was manually calculated. The pseudo *F* test statistic was calculated by multiplying f^2 by (n-k-l), where n is the sample size and k is the number of independent construct (Mathieson et al., 2001, p. 104). The significance levels of the calculated test statistics for testing the significance of effect size (f^2) is set out in the last column of Table 7.5. The results displayed indicate that all constructs with an effect size displayed have achieved significance at least at the $p \leq 0.05$ level.

(a) Taxpayer Model

For the Taxpayer Model, the table shows that only four out of ten independent constructs had some effect on the dependent construct *BEHV*. The four independent constructs, *BI, PBC, CnP* and *DSTd* seem to be the key explanatory factors in terms of incremental variance explained in the dependent variable. For the dependent construct *BI*, five out of seven independent constructs showed some effect. This suggests that these five constructs, *ATT1, SNORM, PBC, OTHERS*, and *TXSY,* are the key explanatory factors for the dependent variable *BI*. In terms of the dependent construct, *ATT1* and *ATT2*, only the *CnP* construct displayed any acceptable effect size on each of the attitude constructs (that is, *ATT1* and *ATT2*). Unfortunately, the *CnPeff* construct did not display any effect size on either of the attitude constructs.

(b) Tax Agent Model

The above table also confirms that the same four independent constructs exerted some effect on the dependent construct *BEHV*. These independent constructs, *BI, PBC, CnP* and *DSTd* appear to be the key explanatory factors in terms of incremental variance explained in the dependent construct, *BEHV*. Further, the table shows that although the impact of adding *TXAU* (f^2 = 0.013, p = 0.05) and *DSTb* (f^2 = 0.014, p = 0.05) were marginally below the threshold, both are significant (Mathieson et al., 2001). The results further indicate four out of seven independent constructs as having some effect on the dependent construct *BI*. These include *ATT1, SNORM, OTHERS* and *TXAU;* suggesting these four independent constructs to be the key explanatory factors in terms of incremental variance explained in the dependent variable, *BI.* For the *ATT1* construct, both the independent constructs appear to have some effect on the *ATT1* construct. However, in respect of the *ATT2* construct, the *CnPeff* construct displayed a small effect, whereas the *CnP* construct showed no effect on *ATT2.*

In summary, the results from both the Taxpayer and Tax Agent models confirm that the total variation in the dependent construct *BEHV* (behaviour) was produced equally by the four independent constructs: *BI* (behavioural intent), *PBC* (perceived behavioural control), *CnP* (justice elements of the penalties regime), and *DSTd* (social distance).

The total variation in the other dependent construct *BI* (behavioural intent), in respect of the Taxpayer Model, was created by the effects of five independent constructs: *ATT1* (attitude based on non-legal sanctions), *SNORM* (subjective norm), PBC (perceived behavioural control), *OTHERS* (societal norms or prevalence of others' compliance behaviour), and *TXSY* (perception of the tax system). In contrast, and in respect of the Tax Agent Model, four independent constructs contributed towards the total variance in the dependent construct *BI* (behavioural intent): *ATT1* (attitude based on non-legal sanctions), *SNORM* (subjective norm), *OTHERS* (prevalence of others' compliance behaviour), and *TXAU* (perception of the tax authority).

The next step involved testing the structural models (both the Taxpayer and Tax Agent Models) in order to determine whether they are valid representations of tax compliance behaviour. This was carried out by assessing the significance of the *t*-statistics of the proposed relationships among constructs that directly or indirectly influence tax compliance intentions and ultimately tax compliance behaviour.

7.3.3 Significance Test of Path Coefficients

In evaluating the structural models' (Taxpayer and Tax Agent) predictiveness, the path coefficients between each construct in the structural models were also estimated using the bootstrap technique, with 1,000 sub-samples. The path coefficients indicate the size, direction and significance of the statistical relationship between two constructs (Hair et al., 2006). The files generated by the bootstrap technique, to investigate the path coefficients, are found in Appendices 7 and 8, respectively. Graphical representations of the findings from the Taxpayer and Tax Agent Models are illustrated in Figures 7.1 (Taxpayer) and 7.2 (Tax Agent) respectively, and the detailed results for both Taxpayer and Tax Agent Models are found in Appendices 15 and 16. The results from the assessment of the structural models are summarised in Table 7.6, which reports each independent construct's effect on its corresponding dependent constructs, the path coefficients, the observed *t*-statistics and their corresponding level of significance.

Table 7.6: Summarised Results from the Evaluation of the Structural Models

Measures	Taxpayer Model				Tax Agent Model			
	Effect	**Path coefficient**	***t*-value**	**Sig. level**	**Effect**	**Path coefficient**	***t*-value**	**Sig. level**
Effect on BI	R^2 **= 0.474**				R^2 **= 0.451**			
ATT1	+	0.363	4.25	*****	+	0.521	6.79	*****
ATT2	+	0.071	0.97	*n/s*	-	0.038	0.48	*n/s*
PBC	+	0.118	1.41	*	+	0.048	0.53	*n/s*
SNORM	+	0.129	1.69	**	+	0.124	7.73	*****
OTHERS	+	0.131	2.02	***	+	0.139	2.39	***
TXAU	-	0.007	0.11	*n/s*	+	0.144	2.03	***
TXSY	+	0.151	1.87	**	+	0.022	0.34	*n/s*
Effect on BEHV	R^2 **= 0.450**				R^2 **= 0.259**			
BI	+	0.341	3.74	*****	+	0.267	2.66	****
PBC	+	0.345	4.96	*****	+	0.185	1.11	*n/s*
TXAU	-	0.046	0.59	*n/s*	+	0.133	1.74	**
CnP	+	0.112	1.17	*n/s*	+	0.180	1.71	**
CnPeff	+	0.015	0.22	*n/s*	+	0.035	0.30	*n/s*
TXSY	+	0.038	0.52	*n/s*	-	0.070	0.70	*n/s*
DSTa	-	0.071	0.89	*n/s*	-	0.057	0.59	*n/s*
DSTb	-	0.067	0.74	*n/s*	-	0.130	1.12	*n/s*
DSTc	-	0.010	0.11	*n/s*	-	0.186	1.61	*
DSTd	+	0.180	2.15	***	+	0.113	1.50	*
Effect on ATT1	R^2 **= 0.136**				R^2 **= 0.057**			
CnP	+	0.376	5.65	*****	+	0.210	2.74	****
CnPeff	-	0.029	0.32	*n/s*	-	0.162	1.94	**
Effect on ATT2	R^2 **= 0.071**				R^2 **= 0.063**			
CnP	+	0.224	3.13	****	-	0.058	0.60	*n/s*
CnPeff	+	0.095	1.14	*n/s*	-	0.256	2.51	***

Note: *p< 0.10; **p<0.05; ***p<0.025; ****p<0.005; *****p<0.001 ; n/s = not significant (1-tail test).

(a) Effect on Behavioural Intent (*BI*)

Table 7.6 confirms the statistically significant causal paths for all independent constructs (except *ATT2* and *TXAU*) to *BI*, for the Taxpayer Model. *ATT1* demonstrated a moderately strong path coefficient of β = +0.363, with a significance level of $p \leq 0.001$. The remaining path coefficients, *PBC* (β = +0.118), *SNORM*, (β = +0.129), *OTHERS* (β = +0.131), and *TXSY* (β = +0.151) reflected moderate relationships with *BI.* All of these path coefficients were significant at least at the 0.05 significance level; except *PBC*, which was found to be marginally significant at the 0.1 level. A significance level of 0.1 is acceptable in behavioural research which is exploratory in nature.[156] Furthermore, all the significant path coefficients

[156] A significance level of 0.1 is acceptable for exploratory behavioural research in the domain of behavioural science (Russell & Roberts, 2001). Further, a number of behavioural studies have accepted *p*-values of 0.10 including Hasseldine et al. (1994, p.87) and Jones et al. (2002, p.149).

displayed the expected positive sign. In contrast, the results indicate inconclusive outcomes for *ATT2* and *TXAU*.[157]

In terms of the Tax Agent Model, all constructs except *ATT2, PBC* and *TXSY* displayed significant path coefficients. As with the Taxpayer Model, the results for the Tax Agent Model indicated *ATT1* as having a moderately strong relationship with *BI,* reporting a path coefficient of β = +0.521, and a significance level of $p \leq 0.001$. The other constructs which displayed moderate influence on *BI* include: *SNORM* (β = +0.124), *OTHERS* (β = +0.139) and *TXAU* (β = +0.144). All these path coefficients are significant at least at the $p \leq 0.025$ level and positively related. The results for *ATT2, PBC* and *TXSY* indicated inconclusive outcomes.

(b) Effect on Behaviour (*BEHV*)

The results for the Taxpayer Model indicate that only three independent constructs linked to *BEHV*, demonstrated any significant effects on *BEHV*. Of the three constructs, *BI* and *PBC* appear to exert the most significant influence on *BEHV*. *BI* displayed a positive path coefficient of β = +0.341, and a significance level of $p \leq 0.001$. Similarly, *PBC* displayed a positive path coefficient of β = +0.345 and a significance level of $p \leq 0.001$. The third independent construct, *DSTd,* displayed a moderate effect on *BEHV*, with a path coefficient of β = +0.180 and a significance level of $p \leq 0.025$. Further, all three significant path coefficients exhibited the expected positive sign. In contrast, the results indicate inconclusive outcomes for the remaining constructs.

The Tax Agent Model revealed five independent constructs to be significant, with *BI* displaying a path coefficient of β = +0.267, and a significance level of $p \leq 0.005$). *TXAU* (β = +0.133) and *CnP* (β = +0.180) both indicated positive significant path coefficients at the 0.05 significance level. *DSTc* and *DSTd* displayed marginal but acceptable significant path coefficients.

The TPB postulates that PBC has a direct and an indirect path to *BEHV*. Hair et al. (2006, p.868) set out the method for calculating the total effect by multiplying the indirect effects and summing it up with the direct effect. The total effect of PBC calculated for the Taxpayer Model is 0.386 whereas the total effect calculated for the Tax Agent Model is 0.198.

[157] This outcome for *ATT2* was expected, as it was hypothesised that legal sanctions will not influence behavioural intentions to comply, or not comply.

(c) Effect on Attitude Based on Non-Legal Sanctions (*ATT1*)

The effect of *CnP* on *ATT1* was significant and positive for both Taxpayer (β = +0.376, $p \leq 0.001$) and Tax Agent Models (β = +0.210, $p \leq 0.005$). In contrast, the effect of *CnPeff* on *ATT1* was inconclusive for the Taxpayer Model but was significant and negative for the Tax Agent Model (β = -0.162, $p \leq 0.05$).

(d) Effect on Attitude Based On Legal Sanctions (*ATT2*)

The effect of the *CnP* constructs on *ATT2*, in respect of the Taxpayer Model, was positive and significant (β = +0.224, $p < 0.005$), whereas the link between *CnPeff* and *ATT2* was inconclusive. In contrast, the link between *CnP* and *ATT2* was found to be inconclusive, for the Tax Agent Model, but the influence of the *CnPeff* on *ATT2* was found to be negative and significant (β = -256, $p < 0.025$).

In summary, the results indicate that Behavioural Intentions (*BI*) and Behaviour (*BEHV*) both displayed relatively good fit to the respective data for both samples. Attitudes based on non-legal sanctions also displayed a relatively good fit (albeit a moderate influence) for the Taxpayer Model; however, this was not the case for the Tax Agent Model. Further, attitudes based on legal sanctions did not show any significance for either of the models. Overall, the results substantiated the expectations that some of the paths in the model may be of little or no significance. In particular, the *ATT2* construct which refers to attitudes based on legal sanctions was expected to be either of little significance or of no significance in influencing behavioural intentions.

One final test before confirming the outcome of the established hypotheses is a global goodness of fit index, to measure the overall adequacy of the research models. This is presented in the next section.

7.3.4 Goodness of Fit Index

A global criterion of goodness of fit (GoF) index as proposed by Tenenhaus (2004), and presented and explained in Chapter 5, was applied to measure the quality of the causal model. The GoF index takes into account the model's performance in both the measurement and the structural model, providing a single measure for the overall prediction performance of the causal model (Esposito Vinzi et al., 2010).

The indices for explained variability (R^2) and communality were obtained from the 'Deck.lst' file, generated by the bootstrapping procedure. Explained variances (R^2) are only

computed for endogenous constructs, whereas communalities are computed for both endogenous and exogenous constructs (Tenenhaus et al., 2005). The average communality is computed as a weighted average of the various communalities with the number of indicators of each construct as weights. Single indicator constructs were excluded from the computation of the average communality because they will automatically result in communalities equal to 1 (Tenenhaus et al., 2005). In this study, all constructs have a minimum of two indicators, and therefore all constructs were included in the computation for the average communality.

Both models have only four endogenous constructs and therefore the sum of the explained variability (R^2) was divided by four. This gave an average score of 0.283 for the Taxpayer Model and 0.207 for the Tax Agent Model. The average communality was computed as 0.632 for the Taxpayer Model and 0.583 for the Tax Agent Model. The GoF indexes were then calculated based on the formula, which was explained in Chapter 5, and reproduced below:

$$\text{GoF} = \sqrt{\overline{\text{communality}} \times \overline{R^2}}$$

The calculated GoF index for the Taxpayer Model is 0.42 and 0.35 for the Tax Agent Model. As discussed in Chapter 5, there are no widely accepted thresholds to judge the significance of index. Based on comments from Professor Wynne Chin,[158] and results from a number of recent studies (for example, Tenenhaus et al., 2005; and Duarte & Raposo, 2010), an index measuring 0.3 seems adequate. This clearly suggests that the GoF indexes achieved for the Taxpayer and Tax Agent Models, of 0.42 and 0.35, respectively, are adequate, and provide further support in terms of the acceptable quality of both structural models used in this study.

In summary, the overall fit of the structural models (for Taxpayer and Tax Agent Models) was evaluated by the incidence of significant relationships among the constructs on the one hand, and by the explained variance of the endogenous latent variables on the other hand. The Taxpayer and Tax Agent Models show reasonably good fit, and some of the hypothesised paths are significant and in the direction hypothesised. In addition, the adequacy of the overall fit of both models was further supported by the acceptable level of the GoF indices.

7.4 HYPOTHESES TESTING

The preceding two sections provided evidence of the adequacy of the measurement and structural models for both samples, and also the adequacy of the overall fit of these models.

[158] Professor Wynne Chin, personal communication, November 3, 2009.

The next section links the results to the hypotheses established in Chapter 4, in order to determine which of these hypotheses are supported as a result of the analysis.

Table 7.7 presents the hypotheses established for this study and the statistical outcomes, based on results from testing the Taxpayer and Tax Agent Models as presented in Table 7.6. Every significant relationship identified in Table 7.6 is characterised by a path coefficient of more than 0.1, and can therefore not be neglected (Sellin & Keeves, 1994). For the Taxpayer Model, the results in Table 7.7 show that nine out of sixteen hypotheses were supported, one was partially supported, and six were not supported, and therefore rejected. In terms of the Tax Agent Model, nine out of sixteen hypotheses were supported, two partially supported and five were rejected.

Hypothesis 1, which stated that Behavioural Intent (*BI*) will have a significant influence on a person's tax compliance behaviour (or Behaviour (*BEHV*)) was fully supported for both the Taxpayer ($\beta = 0.341$, $t = 3.74$, $p < 0.0001$) and Tax Agent ($\beta = 0.269$, $t = 2.66$, $p < 0.005$) Models, with the paths linking *BI* to *BEHV* being positive and significant. The results are consistent with the TPB, which posits that Behavioural Intent (*BI)* is the immediate antecedent of Behaviour (*BEHV*).

Hypotheses 2a and 2b evaluated the relationships between *BI* and *ATT1*, and *BI* and *ATT2*. In support of hypothesis 2a, *ATT1* (attitude based on non-legal sanctions) displayed a significant positive effect on *BI*, for both the Taxpayer ($\beta = 0.363$, $t = 4.25$, $p < 0.001$) and Tax Agent ($\beta = 0.521$, $t = 6.79$, $p < 0.001$) Models. Further, as predicted, Hypothesis 2b, which stated that *ATT2* (attitude based on legal sanctions) will not have any significant influence on *BI*, was supported. The path coefficients between *BI* and *ATT2* for both models were not significant. The results provide support that attitude based on the effects of legal sanctions (with its associated fiscal punishment for noncompliance) may not be as effective or relevant as attitudes based on the effects of non-legal sanctions, in increasing an individual's (behavioural) intention to perform certain behaviour.

Hypothesis 3, which stated that *SNORM* (subjective norms) will have a significant effect on *BI*, was supported for both the Taxpayer ($\beta = 0.229$, $t = 1.70$, $p < 0.05$) and Tax Agent ($\beta = 0.124$, $t = 7.73$, $p < 0.001$) Models; with each model displaying a significant and positive link from *SNORM* to *BI*. This outcome suggests that the more a person values his or her important referents' expectation, and the more motivated he or she is to comply with the important referents' expectations, the more likely they would be willing to comply with that expectation. This expectation will influence an individual's behavioural intention towards the

behaviour. A person's tax compliance intention is positively related to the normative beliefs of his or her important referents.

Hypotheses 4a and 4b addressed the relationship between *PBC* (Perceived Behavioural Control) and *BI* (Behavioural Intent) and between *PBC* and *BEHV* (Behaviour). Hypothesis 4a, which stated that *PBC* will have a significant positive influence on *BI*, was marginally supported for the Taxpayer Model ($\beta = 0.118$, $t = 1.413$, $p < 0.10$) but not supported for the Tax Agent Model. Hypothesis 4b, which claimed that *PBC* will have a significant and positive influence on *BEHV*, was supported in terms of the Taxpayer Model ($\beta = 0.345$, $t = 4.946$, $p < 0.001$), but no support was provided for the Tax Agent Model. The results suggest that an individual's beliefs about the presence of factors that may facilitate or inhibit the performance of the behaviour will influence that individual's tax compliance behaviour directly or indirectly through behavioural intentions. Unfortunately, the non-significant outcome suggest that these factors may have no effect on Tax Agents' behavioural intention or behaviour.

In support of Hypothesis 5, *OTHERS* (perceived prevalence of compliance behaviour by others) displayed a positive and significant influence on *BI* (Behavioural Intent) for both the Taxpayer ($\beta = 0.131$, $t = 2.018$, $p < 0.025$) and Tax Agent ($\beta = 0.139$, $t = 2.39$, $p < 0.025$) Models. The results suggest that an individual's perception that others are complying with their tax obligations will influence that individual's (behavioural) intention to comply with his or her own tax obligations.

Hypotheses 6a and 6b addressed the potential influence of the *TXSY (*Tax System) on *BI* (Behavioural Intent) and *BEHV* (Behaviour), respectively. Whilst the results indicated that *TXSY* had a positive and significant influence on *BI* for the Taxpayer Model ($\beta = 0.151$, $t = 1.1866$, $p < 0.05$), the link between *TXSY* and *BI* for the Tax Agent Model was not significant. Hypothesis 6a was therefore accepted for the Taxpayer Model and rejected for the Tax Agent Model. Failing to support Hypothesis 6b, *TXSY* did not show any significant effect on *BEHV*, for neither the Taxpayer nor the Tax Agent Model. The results suggest that the *TXSY* construct, which comprised elements of compliance cost, is only relevant to Taxpayer's (Behavioural) intention and not relevant for the Tax Agent Model.

Hypotheses 7a and 7b related to the influence exerted by the *TXAU* (Tax Authority) on *BI* (Behavioural Intent) and on *BEHV* (Behaviour), respectively. Hypothesis 7a, which stated that positive perception of the *TXAU* will positively influence *BI*, did not support the Taxpayer Model, but supported the Tax Agent Model ($\beta = 0.144$, $t = 2.03$, $p < 0.025$). Similarly, Hypothesis 7b, which stated that a positive perception of the *TXAU* will positively

influence *BEHV*, did not support the Taxpayer Model, but provided support for the Tax Agent Model (β = 0.133, t = 1.74, p < 0.05). The results indicate that while perceptions of the tax authority may influence behavioural intentions, and behaviour for the Tax Agent sample, perceptions of the tax authority had no effect on the Taxpayer sample's behavioural intention or behaviour.

Hypothesis 8, which stated that *DST* (degree of 'social distance' from the tax authority) will influence *BEHV* (Behaviour), was partially supported for both models. *DST* comprised four levels of social distance, ranging from fully noncompliant (*DSTa* or the *disengagement* posture), to fully compliant (*DSTd* or the *commitment* posture). In terms of the Taxpayer Model, only respondents who are fully compliant or adopting a *commitment* posture (*DSTd*) displayed a positive and significant relationship to *BEHV* (β = 0.180, t = 2.150, p < 0.025), thereby providing partial support to Hypothesis 8. In terms of the remaining Taxpayer respondents; those less compliant or displaying a *resistance* posture (*DSTc*) to fully noncompliant or those adopting a *disengagement* posture (*DSTa*), all displayed a negative effect as expected, but none of the results were significant. Similarly, Hypothesis 8 was partially supported for the Tax Agent Model. Individuals who were fully compliant and displayed the *commitment* posture (*DSTd*), displayed a positive and marginally significant influence on *BEHV* (β = 0.113, t = 1.50, p < 0.10). In contrast, individuals who were considered to be not fully compliant and who adopted the *capitulation* posture (*DSTc*), displayed a negative but marginally significant influence on tax compliance behaviour (β = -0.186, t = 1.61, p < 0.10). The remaining two levels of compliance (*DSTb* and *DSTa*) which relates to the *resistance* posture and *disengagement* posture, respectively, displayed negative effects as expected; however, the results were not significant. Overall, the results were inconclusive, although they suggest that social distance is relevant for individuals who are considered fully compliant (*commitment*).

Hypotheses 9a and 9b related to the influence of *CnP* (justice elements of the CPR) on *BEHV* and on *ATTI* and *ATT2*. Hypothesis 9a, which stated that *CnP* will positively influence *BEHV*, was not supported for the Taxpayer Model, but exhibited a significant positive relationship for the Tax Agent Model (β = 0.180, t = 1.71, p < 0.05). The outcome suggests that the justice elements of the CPR, (*CnP*) have no influence on the behaviour of the Taxpayer sample, but have a positive influence on the behaviour of the Tax Agent sample.

In support of Hypothesis 9b, which stated that the justice perceptions of *CnP* (justice elements) will positively influence attitudes (*ATT1* and *ATT2*), the path coefficients between *CnP* and *ATT1* (β = 0.376, t = 5.65, p < 0.001) and *CnP* and *ATT2* (β = 0.224, t = 3.13,

$p < 0.005$) were both positive and significant for the Taxpayer Model. In contrast, the path coefficient between *CnP* and *ATT1*, for the Tax Agent Model, was positive and significant ($\beta = 0.210$, $t = 2.74$, $p < 0.005$), but the link between *CnP* and *ATT2* was not significant, resulting in partial support for Hypothesis 9b. The results suggest that the justice elements of the CPR are capable of significantly influencing both attitudes (*ATT1* and *ATT2*) of the Taxpayer sample. In contrast, for the Tax Agent sample, the justice elements of the penalties regime were only significant for *ATT1*, but no significant effect was found in its relationship with *ATT2*.

Hypotheses 10a and 10b evaluated the influence of CnPeff (the effectiveness of the CPR) on BEHV (Behaviour) and ATT1 and ATT2 (attitudes). Hypothesis 10a stated that *CnPeff* (effectiveness of the CPR) will have a positive influence on *BEHV* (Behaviour). The path coefficient between *CnPeff* and *BEHV* was positive but not significant for both models, leading to the rejection of Hypothesis 10a. The results indicate that the perceived effectiveness of the CPR have no influence on the behaviour of either the Taxpayer or Tax Agent samples.

Hypothesis 10b stated that *CnPeff* (effectiveness of the CPR) will positively influence *ATT1* (attitude based on non-legal sanctions) and *ATT2* (attitude based on formal sanctions) compliance behaviour. The path coefficients between *CnPeff* and *ATT1* and *CnPeff* and *ATT2* were both not significant for the Taxpayer Model. Conversely, the path coefficients between *CnPeff* and *ATT1* ($\beta = -0.162$, $t = 1.94$, $p < 0.05$) and *CnPeff* and *ATT2* ($\beta = -0.256$, $t = 2.51$, $p < 0.025$) were both negative and significant for the Tax Agent Model. The results suggest that the perceived effectiveness of the regime will contribute negatively towards an individual's attitudes (*ATT1* and *ATT2)* towards compliance behaviour. This outcome, which was unexpected, suggests that increased perceived effectiveness of the penalties regime leads to negative attitudes towards compliance.

In summary, all hypotheses (listed in Table 7.7 below), with the exception of 6b, 7a, 7b, 9a, 10a and 10b, in respect of the Taxpayer Model, were fully or partially supported. In terms of the Tax Agent Model, all hypotheses, except hypotheses 4a, 4b, 6a, 6b and 10a, were either fully or partially supported. In addition, all hypotheses relating to the TPB elements were supported for both models, with the exception of the *PBC* element on *BI* and *BEHV*, in respect of the Tax Agent Model.

Table 7.7: Summary of Results of Hypotheses Testing

Hypotheses	Research Hypothesis	Taxpayer	Tax Agent
		Results	Results
Hypothesis 1	Positive behavioural intentions to comply will positively influence tax compliance behaviour.	**Accepted**	**Accepted**
Hypothesis 2a	Positive attitudes based on informal sanctions towards tax compliance will have a positive effect on behavioural intentions.	**Accepted**	**Accepted**
Hypothesis 2b	Positive attitudes based on formal sanctions towards tax compliance will not have any effect on behavioural intentions.	**Accepted**	**Accepted**
Hypothesis 3	Positive subjective norms will positively influence behavioural intentions.	**Accepted**	**Accepted**
Hypothesis 4a	Lower degrees of perceived behavioural control over noncompliance will positively influence behavioural intentions.	**Accepted**	*Rejected*
Hypothesis 4b	Lower degrees of perceived behavioural control over noncompliance will positively influence tax compliance behaviour.	**Accepted**	*Rejected*
Hypothesis 5	Perceptions of the prevalence of tax compliance by the general population (positive societal norms) will positively influence behavioural intentions.	**Accepted**	**Accepted**
Hypothesis 6a	Favourable views of the tax system will have a positive influence on behavioural intentions.	**Accepted**	*Rejected*
Hypothesis 6b	Favourable views of the tax system will have a positive influence on tax compliance behaviour.	*Rejected*	*Rejected*
Hypothesis 7a	Positive views of the tax authority will positively influence behavioural intentions.	*Rejected*	**Accepted**
Hypothesis 7b	Positive views of the tax authority will positively influence tax compliance behaviour.	*Rejected*	**Accepted**
Hypothesis 8	Deference postures (or least social distance adopted) will positively reflect more positive tax compliance behaviour.	**Partially Accepted**	**Partially Accepted**
Hypothesis 9a	Favourable justice perceptions of the Compliance and Penalties Regime will positively influence tax compliance behaviour.	*Rejected*	**Accepted**
Hypothesis 9b	Favourable justice perceptions of the Compliance and Penalties Regime will positively influence attitudes towards tax compliance.	**Accepted**	**Partially Accepted**
Hypothesis 10a	Perceived effectiveness of the Compliance and Penalties Regime will positively influence tax compliance behaviour.	*Rejected*	*Rejected*
Hypothesis 10b	Perceived effectiveness of the Compliance and Penalties Regime will positively influence attitudes towards tax compliance.	*Rejected*	**Accepted**

7.5 SUMMARY

This chapter presented the results from the assessment of the measurement and structural models. The measurement and structural models were evaluated using a bootstrap technique

with 1,000 resamples in PLS-Graph. In the first of a two-step procedure, a number of reliability and validity tests were conducted, in order to determine the integrity and adequacy of the measurement model. Once the integrity and adequacy of the measurement models were established, the structural models were assessed. This involved examining the standardised path coefficient and its corresponding significance values, including the R^2 and effect size (f^2) of all endogenous constructs.

The final step included calculating a global goodness of fit index for validating the PLS causal model globally. The combination of the measurement and structural model analysis (which included factor analysis and hypothesis testing in the same analysis) resulted in a more rigorous evaluation of the theoretical model and offers a better methodological assessment tool (Bollen, 1989; Bullock et al., 1994; and Joreskog & Sorbom, 1989).

The PLS results suggest that the model estimates for both the measurement and structural models were adequate for both of the Taxpayer and Tax Agent Models. In terms of the measurement models, there was adequate convergent and discriminant validity for all constructs included in both the Taxpayer and Tax Agent Models. For the structural models, the predictor constructs adequately explained the two outcomes constructs of Behavioural Intent (*BI*) and Behaviour (*BEHV*). The global goodness of fit index calculated revealed the adequacy of the overall fit of the Taxpayer and Tax Agent Models.

The results were then linked to the hypotheses developed in Chapter 4. Overall, all except six out of a total of sixteen hypotheses developed for the current research were accepted in respect of the Taxpayer Model, and all except five out of a total of sixteen hypotheses relating to the Tax Agent Model were accepted.

The results are summarized in Chapter 8, which includes the interpretation of the results and the implications for tax authorities and policymakers. The next chapter also addresses some of the limitations associated with the current study and offers recommendations for future extensions.

CHAPTER 8
SUMMARY OF FINDINGS, IMPLICATIONS, LIMITATIONS AND FUTURE DIRECTIONS

8.1 INTRODUCTION

This research was undertaken to explore the diverse range of psychological influences, in addition to economic factors, affecting tax compliance behaviour. This final chapter contains a summary of the results from testing the research models and conclusions based on the results.

The introduction to this chapter is followed by section 8.2, which presents an overview of the research, including the research objectives. Section 8.3 summarises the results presented in Chapters 6 and 7, followed by a discussion of the findings. Section 8.4 highlights the contributions made by this thesis to the current body of literature. Section 8.5 presents and discusses the policy implications and challenges of the findings for tax authorities and policy makers. Section 8.6 discusses some of the limitations identified in this study. Some potential future directions and possible extensions to the current study are recommended in section 8.7. Finally, section 8.8 presents some concluding comments.

8.2 OVERVIEW OF RESEARCH

The key objective of this study was to examine selected tax compliance variables within the framework of the Theory of Planned Behaviour (TPB), while at the same time testing the validity and adequacy of the TPB Model in explaining individual's tax compliance behaviour. The objectives also include testing the Structural Equation Modelling (SEM) approach, using Partial Least Squares (PLS) to predict behavioural intentions and behaviour. The analysis was carried out in PLS-Graph, which is an analytical tool capable of handling complex causal models, and which simultaneously carries out factor analysis, multiple regressions, and path analysis. The data was collected through multiple survey methods: mail survey for the sample comprising taxpayers; and web-based survey for the sample comprising tax agents.

Hypotheses concerning the effects of beliefs and attitudes on intentions to comply, and ultimately on behaviour, were proposed and tested. The key elements of the research models were grounded in the TPB, Deterrence Theory, and Procedural Justice Theory (PJT). Whilst the key elements of this study were based on beliefs and attitudes, economic elements (such as legal and formal sanctions) were also included in the research models. The premise is that tax compliance behaviour is complex and a multitude of variables, rather than a few, influence compliance behaviour. The inclusion of all possible variables in one model is

beyond the scope of this study; nevertheless, several key economic and noneconomic variables were selected for inclusion in the research models.

This area of study was chosen to fill the research gap in studies examining selected behavioural theories in tax compliance in a New Zealand context. Given that tax noncompliance is a continual and growing problem globally, including New Zealand, there is a need to better understand taxpayers' attitudes and beliefs towards tax compliance (or noncompliance) in order to modify undesirable behaviour. Further, the use of new research tools, in this case, the use of PLS-Graph to analyse the survey data, is in response to calls for researchers to seek and use better research methods (Hessing et al., 1988; Richardson & Sawyer, 2001; and McKerchar, 2010).

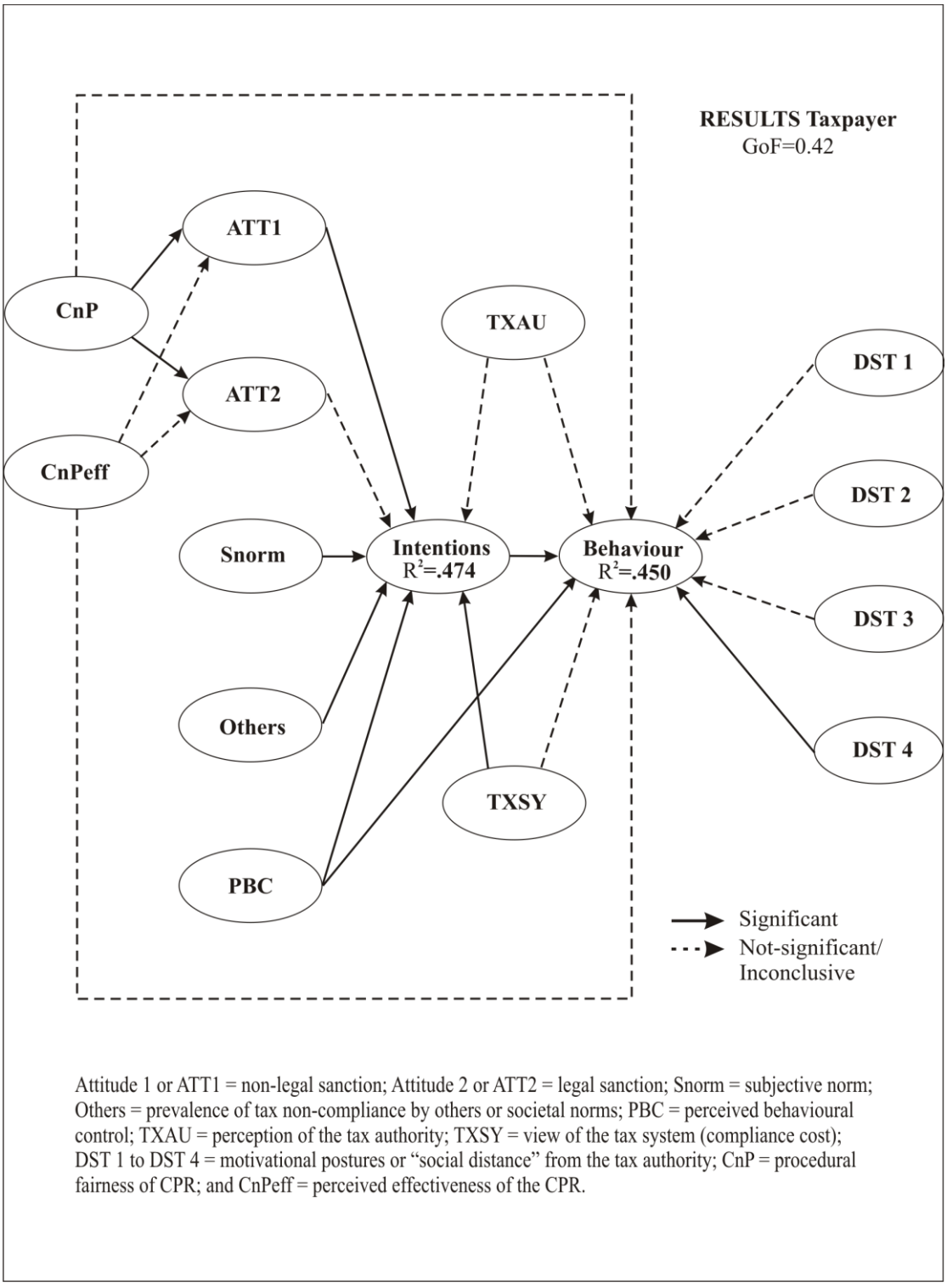
The research also involves predicting the compliance behaviour of two key stakeholders of the tax system, namely: taxpayers, and tax agents. Prior studies provide evidence that taxpayers do not belong to one homogeneous group; rather, taxpayers are made up of different sub-groups comprising various distinguishing characteristics (Ritsema et al., 2003). This may affect the way each sub-group is influenced by internal and external factors, in terms of their tax reporting behaviours. The influence of the variables selected for this study was therefore tested on each of the two distinct groups separately.

8.3 SUMMARY OF FINDINGS

This section provides a summary and discussion of the findings. The full detailed results from the analysis of the survey data are presented in Chapters 6 and 7.[159] The summarised results for the observed population sample for both the taxpayer (Taxpayer Model) and the tax agent (Tax Agent Model) groups are presented in Figures 8.1 and 8.2, respectively. The circles represent the latent variables or constructs. The arrows in bold lines between the latent variables indicate significant relationships between the constructs, whereas the dotted lines indicate that the relationships between the latent variables are inconclusive. The R^2 in the circles indicates the variance explained for the two key constructs: intentions, and behaviour. Finally, the goodness of fit index (GoF), presented at the top right-hand corner of each table, reflects the global goodness of fit for each of the research models (Taxpayer Model and Tax Agent Model). Both indices measure above the acceptable threshold, thus indicating adequate goodness of fit for both models.

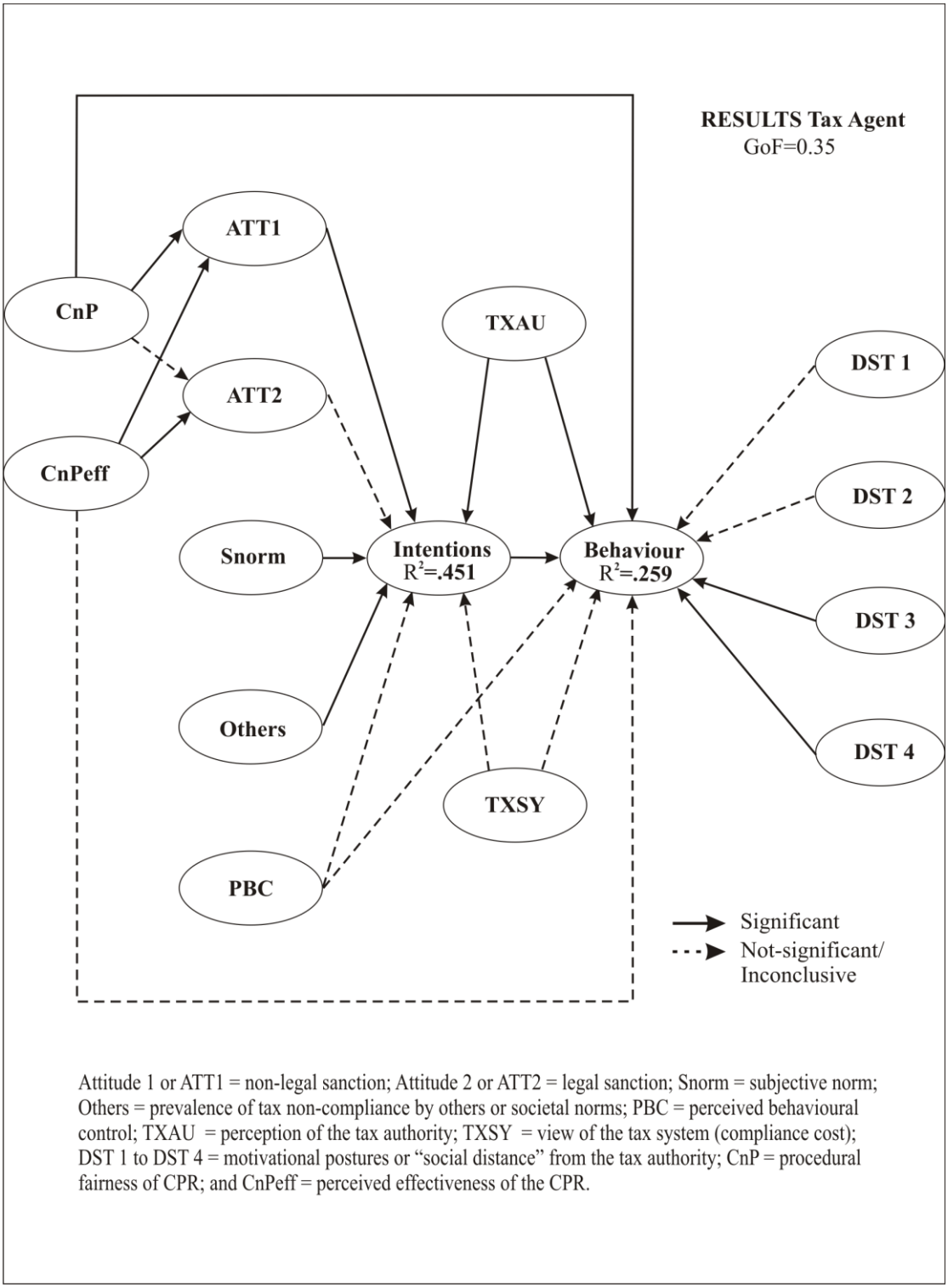
[159] Chapter 6 presents the results of the preliminary analysis, which includes the descriptive statistics, while Chapter 7 presents the PLS results for the Taxpayer and Tax Agent Models.

Figure 8.1: PLS Results of the Path Analysis for the Taxpayer Model



Attitude 1 or ATT1 = non-legal sanction; Attitude 2 or ATT2 = legal sanction; Snorm = subjective norm; Others = prevalence of tax non-compliance by others or societal norms; PBC = perceived behavioural control; TXAU = perception of the tax authority; TXSY = view of the tax system (compliance cost); DST 1 to DST 4 = motivational postures or "social distance" from the tax authority; CnP = procedural fairness of CPR; and CnPeff = perceived effectiveness of the CPR.

Figure 8.2: PLS Results of the Path Analysis for the Tax Agent Model



Attitude 1 or ATT1 = non-legal sanction; Attitude 2 or ATT2 = legal sanction; Snorm = subjective norm; Others = prevalence of tax non-compliance by others or societal norms; PBC = perceived behavioural control; TXAU = perception of the tax authority; TXSY = view of the tax system (compliance cost); DST 1 to DST 4 = motivational postures or "social distance" from the tax authority; CnP = procedural fairness of CPR; and CnPeff = perceived effectiveness of the CPR.

8.3.1 Attitudes (ATT1 and ATT2)

Attitudes comprise measures of attitudes based on formal (or legal) sanctions and attitudes based on informal (or non-legal) sanctions. The effects of both types of attitudes (attitudes based on formal and informal sanctions) were observed; however, no statistically significant influence was observed for Attitude 2 (based on formal sanctions), for either the Taxpayer or Tax Agent group. In contrast, Attitude 1 (based on informal sanctions) supports a statistically significant effect on intentions. This outcome suggests that attitudes based on the effects of informal sanctions (which are based on psychological variables, for example tax morale) are more effective in influencing intentions to comply (or not comply) with the tax laws, than attitudes based on formal sanctions (which are based on economic variables).

Informal sanctions, based on personal norms (as measured by attitudes), are imposed by the individual, and paying tax is motivated by the individual's personal sense of moral values, feelings of guilt and/or sense of civic duty. Formal sanctions, based on economic deterrent tools such as probability of detection, probability of being penalised and perceived severity of the penalties, are imposed by the state, and paying tax is motivated by the fear of being caught and punished.

This outcome is consistent with the literature discussed in Chapter 2, which overwhelmingly supports the role of informal sanctions, based on tax morale and other psychological variables, on tax compliance behaviour. Bobek and Hatfield (2003) found beliefs about guilt to be significant across all three scenarios used in their study.[160] Hasseldine et al. (1994) illustrated that taxpayers who believe evasion is morally unacceptable are more likely to fully comply with their tax obligations. Orviska and Hudson (2002) found that individuals with a sense of civic duty are more likely to be motivated to comply, or, in the context of this study, are more likely to positively influence intention to comply. Kornhauser (2007) maintains that variables such as moral values are internalised, and such internalised norms are more likely to affect behaviour in large groups, particularly in situations where an individual's behaviour is not observable by others.[161] Tax paying behaviour is an activity that is not observable, and therefore social norms are not very effective in such situations because of the difficulty in imposing informal sanctions. On the other hand, internal or personal norms (imposed by self) would have a strong and positive impact on tax compliance (Kornhauser, 2007).

[160] The study used six elicited beliefs which included: cheating intentions; tax paid beliefs; illegal beliefs; penalty beliefs; fairness beliefs; and guilt beliefs.

[161] Kornhauser (2007) refers to moral and ethical values as personal norms, whereas attitudes and beliefs are referred to as tax morale.

8.3.2 Subjective Norms (SNORM) and Societal Norms (OTHERS)

Subjective norms (also sometimes referred to as social norms) were observed to exert positive and statistically significant effects on intentions, for both samples. The results indicate that respondents' beliefs of important referents' expectations of them are significant predictors of intentions. Subjective norms include measures of an individual's perception of important referents' expectations of how they should behave, the threat of loss of respect if they do not conform to referents' expectations, and the perception of how important referents would behave in a similar situation. While personal norms are imposed by self, social norms on the other hand are imposed by important referents, that is, by their expectations (or social pressure) with regard to performing or (not performing) the target behaviour. The outcome suggests that social pressures from important referents (or normative beliefs) are effective in influencing intentions to comply (or not comply) with individuals' tax obligations. This finding is consistent with the results from Bobek and Hatfield (2003) and Trivedi et al. (2005).

Societal norms or positive (or negative) perceptions of others' tax reporting behaviour, also positively influenced intentions to comply, in respect with both sample groups. Societal norms are imposed by society and are based on the norms of the general taxpaying population. The results suggest that societal norms are important motivators in an individual's intention to comply with the tax laws.

While the effects of informal sanctions by peers and society could influence behaviour, the actual noncompliant behaviour is not visible, and therefore not observable. Social sanctions in the form of disapproval from referents (or society) would not be forthcoming if the referent (or society) is unaware of any noncompliant activities undertaken by the individual. For informal sanctions to apply, the target behaviour must be visible, or known to those charged with imposing the informal sanctions. However, for the purpose of this research, it is not the threat of the actual informal sanctions that inhibits unacceptable behaviour; rather, it is the individual's perception of the threat of informal sanctions that acts as a deterrent. The outcome of a positive and significant relationship between societal norms and intentions towards tax compliance is supported by a number of studies (Porcano, 1988; Sandmo, 2005; and Traxler, 2010).

8.3.3 Perceived Behavioural Control (PBC)

PBC, which was measured by three elements (financial distress, third party reporting and opportunity) was observed to have a significant effect on intentions, and also a direct effect

on behaviour, but only for the Taxpayer sample. In respect to the Tax Agent sample, the relationships between PBC and intentions, and PBC and behaviour, were observed to be inconclusive. This suggests that the presence or absence of the identified impediments or barriers influence intentions and behaviours of the taxpayers, but, as expected, these impediments are not perceived by the tax agents to have any impact on their intentions to comply (or not comply), nor on their behaviour. Trivedi et al. (2005) did not find any significant relationship between PBC and tax compliance for their student sample. Further, the survey conducted by Bobek and Hatfield (2003) found a significant relationship between PBC and intentions to comply for only one of the three scenarios used for the study. The other two scenarios used in their study failed to show any relationship between PBC and intentions.

The discrepancy in the current study's results between the Taxpayer and Tax Agent samples could be attributed to the tax agents' comparatively higher levels of knowledge (of the tax laws and the tax system), compared to the taxpayers' level of knowledge. As such, tax agents may not consider the PBC factors used in this study as facilitating or hindering their intended behaviour. This is not to suggest that tax agents will not comply because they have control over their behaviour. Rather, the results suggest that PBC has no effect in influencing tax agents' behavioural intentions or tax compliance behaviour. As such, tax agents' behavioural intent, and ultimately behaviour, will instead be influenced by attitudes and subjective norms. The results also demonstrate that measures of PBC that give rise to tax agents' perceptions of control differ from that of the taxpayers.

8.3.4 Tax System (TXSY)

Tax system was measured by statements which elicit taxpayers' views on the fairness of the tax system, which also includes the compliance costs imposed by the tax system. The remaining tax system measures (after the trimming exercise) relate to the cost of compliance. The only significant relationship displayed by the tax system construct is the relationship between the tax system and intentions, in respect to the Taxpayer sample. No other relationship exists between the tax system and other constructs, for either sample group. The only possible explanation to account for this outcome is, perhaps, that compliance costs do not feature in the tax agents' minds when considering fairness of the tax system. On the other hand, compliance costs may be considered to be relevant for taxpayers because, while tax agents may be able to complete their own tax returns, taxpayers with complex tax returns are more likely to engage a tax agent to complete their returns. This means that taxpayers incur compliance costs when complying with their tax obligations.

A number of studies have examined the scope of compliance cost (for example, Blumenthal & Slemrod, 1992); however, studies have not sufficiently examined the relationship between compliance costs and taxpayer compliance behaviour (Richardson & Sawyer, 2001).[162]

8.3.5 Tax Authority (TXAU)

The tax authority construct was measured by statements based on how favourably (or unfavourably) respondents view the tax authority. The effects of perceptions of the tax authority on behavioural intentions and behaviour were found to be inconclusive for the Taxpayer sample, but clearly significant for the Tax Agent sample. One explanation for this outcome could be the lack of, or limited, engagement by most taxpayers with the tax authority, whereas tax agents are more likely to frequently engage with the tax authority on behalf of their clients.

Since the 1999/2000 income year, individual taxpayers in New Zealand who derive income that is fully taxed at source are not required to file tax returns, and as a result do not need to engage or interact with the tax authority. Taxpayers who have complex tax returns are more likely to engage tax agents to complete and file their tax returns; therefore, their contact with the tax authority tends to occur through their tax agents. It is therefore unsurprising that tax agents are more likely than taxpayers to frequently engage directly with the tax authority. Further, the New Zealand tax authority has been increasingly discouraging taxpayers from direct contact with the tax authority; instead, taxpayers are encouraged to self-manage their tax affairs online. While this may increase efficiency and reduce costs, the downside is that taxpayers could potentially become alienated from the tax authority. Perhaps this may be one of the reasons why taxpayers do not appear to have any opinion, whether favourable or unfavourable, towards the tax authority, hence the inconclusive results. In contrast, tax agents may have regular contact with the tax authority; hence the significant relationship between their perceptions of the tax authority and intentions, and also with behaviour directly.

The majority of studies reviewed by Jackson and Milliron (1986) and Richardson and Sawyer (2001) concern the effect of tax authority contact on tax compliance. There does not appear to be any studies examining the effect of people's (favourable or unfavourable) perception of the tax authority on compliance behaviour. The lack of such studies prevents any comparison of the current results with the results of prior studies.

[162] Recent studies tend to examine the burden of compliance cost on taxpayers rather than the relationship between compliance cost and tax compliance behaviour (for example, Guyton et al., 2003; and Mathieu et al., 2010).

8.3.6 Motivational Postures or Social Distance (DST)

Motivational postures, or social distance (DST), were measured by the four motivational postures developed by Braithwaite (2003a; 2003b). These are commitment and capitulation (which are the two deference positions), and resistance and disengagement (which are the two defiance positions). Out of the four motivational postures used for this study, only one deference posture (commitment), for the Taxpayer sample, and two deference postures (commitment and capitulation), for the Tax Agent sample, were significant and positively related to tax compliance behaviour. Braithwaite (2003a) maintains that the two deference postures are the most frequent motivational postures adopted by taxpayers, whereas the two defiance postures were found less frequently. Further, Braithwaite's (2003a) survey found commitment and capitulation (the deference postures) to be negatively related to evasion and tax avoidance (in other words, positively related to compliance), whereas the other defiance postures were positively related to evasion and avoidance.

The somewhat varied outcomes from this study are consistent with the views of a number of researchers who argue that the majority of taxpayers are compliant and honest (Long & Swingen, 1991; James & Alley, 2002; and Kirchler et al., 2009). Further, in most cases, the positions adopted by people are dynamic, as individuals move between the various postures (Braithwaite, 2003a). This explains the inconclusive outcomes for three of the postures in respect to the Taxpayer sample, and the inconclusive outcomes of two of the postures with regard to the Tax Agent sample.

8.3.7 Compliance and Penalties Regime (CPR)

Measures of the effectiveness of the CPR (CnPeff) on both attitude constructs (Attitude 1 and Attitude 2), and on behaviour, were found to be inconclusive for the Taxpayer sample. In contrast, the effect of CnPeff on both attitudes was significant for the Tax Agent sample, although the link between CnPeff and behaviour was inconclusive. The results suggest that taxpayers' attitudes are not influenced by the perceived effectiveness of the CPR, whereas the tax agents' attitudes (both Attitude 1 and Attitude 2) appear to be clearly influenced by the perceived effectiveness of the CPR.

The justice elements of the CPR (CnP), on the other hand, appeared to significantly influence both attitudes (Attitude 1 and Attitude 2), in respect to the Taxpayer sample, although it displayed inconclusive results on its effect on taxpayers' behaviour. In terms of the Tax Agent sample, the CnP element was significant for attitudes based on informal sanctions (Attitude 1), but inconclusive in its effect on attitudes based on formal sanctions

(Attitude 2). Further, the results examining the link between CnP and behaviour are positive and significant for the tax agent sample.

It is interesting to note that the effectiveness of penalties is not relevant to taxpayers' attitudes (based on formal or informal sanctions); however, they appear to be relevant in influencing tax agents' attitudes based on both formal and informal sanctions. Perhaps tax agents who work with the CPR legislation may be aware of the effects of the legislation, whereas taxpayers may be far removed from the CPR in their daily life and, thus, it may not specifically feature in their decision-making process. This argument may explain why the effectiveness of the CPR influences both types of attitudes for tax agents, while at the same time not featuring in taxpayers' attitudes towards compliance. Similarly, the justice elements (CnP) also have different effects on taxpayers and tax agents.

8.3.8 Behaviour

Behaviour is strongly influenced by intentions (or behavioural intentions). For both sample groups, there is a clear, significant and positive relationship between intentions and behaviour. The reasonably high R^2 of both samples (especially in the Taxpayer Model) suggests good predictive power. Further, the acceptable level of the GoF index provides support to the overall fit of both the Taxpayer and Tax Agent Models. A few studies have applied the TPB to examine tax compliance behaviour (Bobek & Hatfield, 2003; Trivedi et al., 2005; and Saad, 2009; 2011); however, only one of the studies has applied the full TPB Model, which includes the relationship between intentions and behaviour.[163]

8.3.9 Perceptions of Tax Offences

Measures of respondents' perceptions of the seriousness of tax noncompliance, together with other civil offences, were also examined in this study. This additional analysis provides information that allows for a better understanding of taxpayers' compliance behaviour. Respondents were required to rate the seriousness of the offence on a Likert scale, and then to rank each offence according to the perceived seriousness of the crime.[164]

[163] A full TPB model refers to models which include all the elements of the TPB, that is: attitudes; subjective norms; PBC; intentions; and behaviour. Bobek and Hatfield (2003) and Saad (2009) did not include behaviour in their TPB models, and therefore did not examine the link between behavioural intentions and behaviour. To the best of the author's knowledge, Trivedi et al. (2005) appears to be the only other published study on tax compliance behaviour to include the effect of intentions on behaviour.

[164] In the rating exercise, each offence was rated individually and based on the perceived seriousness of that particular offence. In contrast, the ranking exercise involved respondents ranking each offence based on the comparative seriousness of the offence (when compared to the other listed offences).

The results from the rating exercise found that the Taxpayer sample tend to consider committing a tax offence as less serious than committing four other similar civil crimes such as: bicycle theft; welfare fraud; bank fraud; and a speeding offence; thus rating the tax offence as the fifth most serious offence. The Taxpayer sample also ranked the tax offence as the fifth most serious offence. In contrast, the Tax Agent sample rated committing a tax offence as the least serious of all the listed offences, at seventh position. However, the tax offence fared better in the ranking exercise, where it was ranked as the third most serious offence, ahead of the drug and speeding offences.

It is interesting to note that whilst the rating and ranking of the tax offence remained consistent for the Taxpayer sample, this was not the case for the Tax Agent sample. Tax agents rated the tax offence as the least serious of the listed crimes (when each offence was judged on its perceived seriousness), whereas it was ranked as the third most serious crime (when each offence was judged based on the relative seriousness of the other offences on the list). This suggests further study may be required to determine whether individuals' perceptions are influenced by the measurement methods adopted.

Further, it may be useful to note that whilst taxpayers were able to review both questions (the rating and ranking) at the same time, tax agents were not able to compare their two responses (rating and ranking).[165] Nevertheless, the overall results are consistent with similar studies from New Zealand and overseas, which found that the general public does not consider committing a tax offence to be a serious crime (McIntosh & Veal, 2001; Karlinsky et al., 2004; and Gupta, 2006; 2007). It is especially worrying that a relatively recent New Zealand study (McIntosh & Veal, 2001) found that over half of the respondents (54 percent) believe that tax evasion by small businesses have increased over the last five years, with only 6 percent believing that evasion has decreased.[166] This is compounded by a further revelation that 79 percent of respondents in the study agree that New Zealand is becoming a society in which understating income is widely acceptable. This would have important implications for the tax authority in terms of penalising tax offenders. If the general public view tax offences as not serious, then it will be challenging for the tax authority to convince tax offenders that the penalties imposed are not unduly harsh.

[165] The electronic survey did not allow respondents to go back to any completed sections of the questionnaire, a flaw the author was unable to address. Nevertheless, the intent was to capture the first view of the respondents, not their hindsight (or reconsidered) views.

[166] Considering that perceptions towards tax offences have remained fairly stable over fourteen years (from Oxley's study in 1993 (Oxley, 1993) to Gupta's 2007 study (Gupta, 2007), it can be assumed that this view may still hold.

This study also examined the link between the perceived seriousness of tax noncompliance (tax offence) and tax compliance behaviour. The results suggest that respondents who consider tax noncompliance to be a serious offence are more likely to comply, and those who do not view this as a serious offence are more likely to be less compliant.

8.3.10 Tax Noncompliers' Views

Taxpayers penalised under the CPR responded to a number of questions eliciting their views on aspects of the penalties imposed, and their experience with the process and the tax authority. The results indicate that on a majority of issues the responses of both groups are similar. It is interesting to note that although culpability would have been established by the tax authority during the disputes process, and before penalties are considered and imposed, both groups of respondents believe that the penalties imposed were harsh, unfair and excessive. Both sample groups were also dissatisfied with the process available in disputing the level of penalties imposed, and did not feel that the tax authority had considered their views in determining the outcome. In terms of experience, both groups felt that the emotional and economic costs were considerable.

Overall, despite respondents' negative views of their experiences, and their reluctance at accepting the decisions of the tax authority, the majority of respondents from both groups admitted that being penalised has deterred them from future noncompliance. This is consistent with the classical deterrence theory of Allingham and Sandmo (1972), which argues for the use of penalties to deter noncompliant behaviour. However, contemporary researchers have demonstrated the importance of procedural justice of legal authorities in discouraging undesirable behaviour and encouraging general compliance. PJT contends that people are more likely to agree and cooperate with the authorities if they consider that the decision-making process and the treatment they received are fair (Tyler, 2010). In the current study, it is unclear whether penalties alone contributed towards this group's future intentions to comply, or a combination of other factors and penalties. Therefore, the tax authority may also need to monitor the long term compliance efforts of tax offenders to determine the effectiveness of penalties.

In summary, the TPB is useful in identifying psychological determinants of self-reported tax compliance behaviour, and could provide a useful tool to tax authorities for developing compliance programs. The key objective of identifying determinants of tax compliance behaviour is to more effectively plan interventions that increase the levels of voluntary compliance. The results of this study (which are supported by other similar studies on a

variety of behaviours),[167] suggest that tax compliance programs would be more effective and efficient, when components identified as those capable of encouraging positive beliefs on tax compliance and the evaluation of those beliefs for the individuals are included in the program design. The results of the current research, which are consistent with a number of prior studies, also demonstrate that less enforcement and less harsh penalties can be implemented at little cost in terms of revenue collected, when other social values are important for individuals. Individuals are willing to comply with their tax obligations to avoid the effects of tax morale on their conscience (informal sanctions), rather than the threat of being caught and punished (by formal sanctions). Changing beliefs about compliance could improve attitudes, which in turn influences intention. The results from this study suggest that people who hold positive evaluations of compliance are more likely to comply. The results also provide support for the application of the full TPB Model to predict behaviour and in explaining the effects of sanctions and other variables.

8.4 RESEARCH CONTRIBUTIONS

There is a large body of research on taxpayer behaviour and compliance; however, most of the results from these studies tend to be mixed or inconclusive. Consequently, there is a need to continue with such research until a comprehensive model of tax compliance is developed from contributions from the increasing number of tax compliance studies. This study therefore attempts to make a small, but useful, contribution to the large body of research currently available.

A large number of researchers agree that tax compliance behaviour is complicated and involves complicated decision processes (McKerchar, 2010). Although there is no denying that legal or formal sanctions have a role in managing taxpayers' compliance behaviour; there are other equally important factors that have not been integrated into most economic models of tax compliance. The findings of this study, which highlights the influence of beliefs and attitudes on compliance behaviour, could potentially contribute towards a more integrated tax compliance model.

The current research is also one of the very few studies to apply the full TPB Model to examine the determinants of tax compliance behaviour.[168] The other known studies did not include behaviour, and therefore did not examine the relationship between intentions and behaviour (Bobek & Hatfield, 2003; and Saad, 2009; 2011). Trivedi et al. (2005) was the only

[167] Refer to the literature review in Chapter 2 for relevant studies.

[168] Full TPB Models comprise all the elements of the TPB (Fishbein & Ajzen, 1975). Some studies tend to omit the behaviour construct (which makes it incomplete).

other study that examined tax compliance behaviour within a full TPB Model. Trivedi et al.'s (2005) study was undertaken in Canada (a different tax jurisdiction), and the sample comprised one group of students. Further, the TPB Model was extended with the inclusion of only one additional construct (ethics). In contrast, the current New Zealand study uses two distinct groups of taxpayers, and the TPB Model was extended with the inclusion of multiple constructs: economic and noneconomic constructs. The current study also applied SEM to analyse the survey data.[169] Further, while this study is not the first, it is one of a few to address the role of procedural justice elements in enhancing tax compliance behaviour, directly and through its intervention on attitudes towards compliance (or noncompliance).

Understanding the types of experiences encountered by taxpayers subjected to the CPR (or any other penalties regime) for tax noncompliance is equally important for tax authorities. To date, no empirical evidence is publicly available on the effects of penalties on detected noncompliant behaviour.[170] This type of information is not publicly available, and therefore this is an area that should be targeted for further research. This knowledge will enable tax authorities to review how their processes are affecting taxpayers' attitudes towards the tax authority, and ultimately on subsequent compliance behaviour. The findings are therefore relevant, and make a valuable contribution to the literature on penalties, although further research is still needed.

While this is one of a number of studies examining people's perceptions of the seriousness of tax noncompliance, this is one of the few to measure the perceived seriousness of committing a tax offence using two different approaches, and then comparing the outcomes of these two approaches. This highlights the need for not only a common definition for tax compliance and other commonly used determinants of tax compliance, but also the need for a standardised method of measuring behaviours and attitudes.

This is also one of the few studies that included and examined the effects of three different types of norms: personal norms; social norms; and societal norms. To the best of the author's knowledge, this study is the first to test the effects of three different types of norms identified in literature (for example, Kirchler, 2007) in one causal model. The results provide empirical evidence of the importance of all three norms in tax compliance behaviour, and make a useful contribution to existing literature, especially in TPB literature, which had so far only focused

[169] Trivedi et al. (2005) have called for a replication of their study using path analysis (or SEM).

[170] An Australian study found that penalties were generally viewed as being ineffective in influencing tax compliance behaviour; however, the study also found that penalties could still be effective on some types of taxpayers, that is, taxpayers who operate within the tax laws (Devos, 2009).

on social norms (that is, subjective norms). This study proves that personal and societal norms are just as important as social norms in predicting compliance behaviour.

By applying SEM with PLS, this study illustrates how PLS path modelling can be used successfully in complex behavioural models with multiple constructs, and also demonstrates the method's capability in handling small samples and non-random data distribution. This study was able to explain the relationship between the various constructs and behavioural intentions and behaviour. The PLS path model is also capable of providing information at the indicator level to show which individual measures contributed more towards a particular construct, and which is not easily available in other forms of analysis (for example, multiple regression analysis). The use of this new methodological approach, which has proven to be a powerful and reliable tool, is an important contribution to tax compliance literature. The tax compliance literature is plagued by low response rates and non-normal data distribution, which would otherwise invalidate the use of parametric technique. Further, the current robust validation process, together with selecting 1,000 resamples for the bootstrapping technique (instead of the recommended 200 to 500 resamples), will enhance the level of confidence in the findings, which according to McKerchar (2010), is itself an important contribution. Tax compliance behaviour is a complex behavioural issue, and to better understand it requires a variety of approaches, methodologies, and data sources. The methodology used, which increased the level of confidence in the findings, is itself an important contribution.

Most previous studies of tax compliance tend to use either taxpayer or tax agent samples. This study appears to be one of the very few studies to use both groups of stakeholders of a tax system: taxpayers, and tax agents. The results provide some unique insights into the similarities and differences of selected determinants of tax compliance behaviour on each of the distinct groups. Prior studies have compared the effects of different variables on the compliance behaviour of taxpayers and tax agents, but none (to the best of the author's knowledge) have examined the elements within a TPB framework.[171] As such the findings of this study can make a valuable contribution to the literature of tax agents and taxpayers.

This study identified a number of weaknesses which allows researchers to identify areas for future research. In addition, there are a number of areas in which the current study can be extended in future research. McKerchar (2010) notes that leaving a trail for other researchers to undertake further research is itself an important contribution to the body of knowledge.

[171] Schisler (1995) compared the effects of equity perceptions, aggressiveness, and degrees of consensus with the tax authority.

Finally, there is a dearth of empirical compliance literature originating from New Zealand, and most New Zealand researchers have to rely on research conducted in other tax jurisdictions. This study is one of the relatively few pieces of empirical research undertaken on tax compliance behaviour in New Zealand, independent of the IRD, and therefore would make a positive contribution towards increasing the current level of knowledge. The results will provide a better understanding of the complex nature of tax compliance behaviour of the New Zealand taxpayers and tax agents, enabling the New Zealand tax authority to better target their interventions.

As noted by McKerchar (2003b), when searching for a 'long-term cure', you need to understand and address the illness rather than treat the symptoms. That is, first we need to understand noncompliance behaviour, and what motivates taxpayers to not comply with their tax obligations, before we can address the noncompliance problem. This research therefore contributes towards understanding some aspects of tax compliance behaviour, especially of New Zealand taxpayers. This is especially important for New Zealand where, as noted, there is comparatively little empirical evidence on which to base policy designs. Studies from other countries are based on their own legislative environment and their administrative practices and culture. As such, it may not be practical to adopt the findings of research from other tax jurisdictions without adapting it to the New Zealand tax environment.

8.5 POLICY IMPLICATIONS

Tax authorities are continuously searching for strategies to increase the level of tax compliance, which would generate increased revenues. Increasing revenue without burdening the taxpayers with increased spending on enforcement activities is critical for most economies, especially in times of large fiscal deficits that are currently facing New Zealand and most developed countries. Designing tax policies that produce a greater outcome for the dollars spent requires understanding the compliance behaviour of taxpayers. This includes testing the effectiveness of traditional compliance models grounded in economic theory, and based on legal or formal sanctions (such as audits and penalties), and other forms of responses (largely based on beliefs, attitudes, and norms) to combat tax noncompliance. The results of this study identified several determinants of tax compliance behaviour, which may have implications for tax authorities, especially for the New Zealand tax authority, and policy makers.

The traditional approach of raising taxes and increasing enforcement strategies are only two of the policy instruments that are frequently used by tax authorities to increase tax revenue (Kirchler, 2007). Although enforcement activities can be easily managed and

controlled by the tax authorities, this approach to increasing compliance levels can be costly and promotes negative attitudes towards tax authorities. Further, a large body of literature provides only limited support on the effectiveness of these policy tools in increasing compliance. Consistent with these findings, the results from the current study indicate that the effects of formal sanctions on behavioural intentions (and ultimately behaviour) were inconclusive. Therefore, it is not clear whether increasing audit rates, or penalties (which will increase the probability of detection), and the certainty and severity of penalties will increase the level of compliance behaviour of New Zealand taxpayers. In fact, Frey (1992) contends that tight monitoring and heavy punishment on noncompliant taxpayers can crowd out tax morale, ultimately resulting in greater noncompliance.

In contrast, the results of this study provide support to the large body of emerging literature that provides evidence that informal sanctions (in some cases collectively referred to as tax morale or personal norms) are more effective than legal or formal sanctions in improving tax compliance levels. This suggests that taxpayers with strong positive personal norms are more compliant than those with lower or negative personal norms. Personal norms or tax morale such as, moral values, feelings of guilt, and a sense of civic duty can be powerful forms of self-sanctioning (Grasmick & Scott, 1982; and Hasseldine et al., 1994), and if such attitudes influence compliance, then enhancing these is a desirable policy instrument to add to the traditional enforcement strategy of the tax authority (which includes penalties and audits).

The implication for the tax authority is therefore to focus less on legal based enforcement, or formal sanctions (for example, audits and penalties), and to focus more on increasing taxpayers' personal norms (that is, taxpayers' values and motivation to comply). One approach is to incorporate personal norms or informal sanctions together with formal sanctions in the tax authority's enforcement strategies. This argument is supported by Kirchler (2007) and Kornhauser (2007), who contend that personal norms are a stronger motivator than most enforcement tools.

In terms of social norms and societal norms, it has been acknowledged in various studies that the majority of taxpayers comply even when enforcement activities are low because of the influence of social and societal norms (Frey & Torgler, 2007; and Kirchler, 2007). The outcome of this study demonstrates that social norms (measured by subjective norms), and societal norms (measured by perceived prevalence of tax compliance or noncompliance by others) were observed to significantly influence both sample groups' intentions to comply with their tax obligations. Therefore, if an individual perceives that their important referents

generally do not themselves comply (subjective norms), or if the general taxpayers at large do not comply (that is, society's norm is perceived to be skewed towards noncompliance), then it is more likely that the individual's level of compliance may decrease.

The implication for the tax authority is therefore to promote the positive aspects of tax compliance, and to communicate to the taxpayers at large that complying fully with the tax laws is the norm in society. If taxpayers believe that the majority are complying it is more likely that they will comply too. On the other hand, if taxpayers believe that the majority of taxpayers are not complying with their tax obligations, compliant taxpayers will eventually rationalise any intentions they may have to not comply fully with their tax obligations. Negative communications highlighting the number of taxpayers who cheat with their taxes might decrease compliance among those who were previously compliant. This view is supported by Kornhauser (2007) who found that positive perceptions of society's compliance behaviour will promote voluntary compliance. However, not only should the tax authority promote the perception that voluntary compliance with the tax law is the norm, they must also manage information about noncompliant taxpayers, in order not to give the general public the impression that tax noncompliance is commonly occurring. Efforts were made by some American states to publish the names of tax offenders (that is, for shaming purposes). However, some researchers warn that such enforcement actions might have other unintended effects, one of which is signalling to other taxpayers that the norm (that tax compliance is prevalent in society) is not adopted by the majority (Kahan, 2006). New Zealand previously had a form of shame penalty for certain tax shortfalls and offences, where the names of offenders were published, but it was repealed in June 2005. Similarly, in Australia the names of tax evaders are no longer published in the Australian Tax Office's Annual Report. Arguably, whilst publicising the names of tax offenders may deter some (for example, those who value their reputation) from not complying, the unintended effect may result in more taxpayers not complying.

Caragata (1998, p. 60) also cautioned that "the longer higher levels of tax evasion persists, the greater is the threat to public confidence in the tax system and the higher is the risk that tax evasion will become more widespread." It is important to acknowledge publicly that the large majority of taxpayers comply, and to inform taxpayers as such. This must be balanced with managed communication about the successes of the tax authority in prosecuting noncompliant taxpayers. Honest taxpayers would also like to know that the tax authority carries a 'big stick' to deal with citizens who do not comply (OECD, 2004). This will build confidence and belief in the legitimacy of the tax system, because there is evidence to suggest

that those who are compliant want those who are not compliant to be punished (OECD, 2004).

The responses from respondents who have been penalised under the CPR indicate that the penalty will deter them from future noncompliance. However, while the tax authority appears to have achieved its objective of deterring noncompliance, the experiences of the respondents from both sample groups have been negative. Most of the respondents considered the penalties to be harsh, unfair and excessive, although the tax authority would have established the level of culpability (as required under the CPR legislation) before imposing appropriate levels of penalties. This suggests that perhaps respondents' attitudes towards the penalties may have been influenced by their perception of the non-seriousness of tax offences. They may have compared their fines for tax noncompliance with the lesser fines imposed for other civil offences, which they may have considered to be comparatively more serious than the tax offence.

Also of concern for the tax authority is that respondents did not feel that the tax authority considered their views in determining the outcome of the dispute. A good disputes process is one that is considered to be procedurally fair. PJT posits that if taxpayers believe that their views were considered in the disputes process, and the procedures were applied fairly, they would be more willing to accept the outcome or decision by the tax authority even if the outcome was unfavourable to them (Tyler, 2010). Perhaps that would be another factor to consider which may have resulted in the tax offenders not accepting the penalties imposed.

In order to achieve the desired behaviour from taxpayers, the tax authority as regulator may have to move towards strategies that aim to emphasise the procedural fairness aspects of their actions (Murphy, 2003). Prior studies have highlighted the ineffectiveness of the use of threats and legal coercion as regulatory tools to encourage compliance (for example, Murphy 2004a; 2004b). These studies demonstrate the need for other approaches to be considered when managing noncompliance such as procedural fairness. Therefore, if the tax authority is perceived to be acting fairly, taxpayers will trust the motives of the tax authority and will react to their decisions voluntarily. Ayres and Braithwaite (1992) caution that regulators (tax authorities) have to 'walk softly' while carrying a 'big stick'. This suggests that whilst threats and legal coercion has its place in deterring noncompliance, tax authorities should also apply other persuasive approaches, such as tax morale and incorporate procedural justice elements into their legal procedures and processes.

The results from examining respondents' perceptions of the severity of committing a tax offence, compared to other similar civil offences, suggest that both taxpayer and tax agent

samples generally view tax noncompliance as less serious than a number of similar civil offences. This outcome is consistent with a number of previous New Zealand studies, which demonstrated that the New Zealand public does not rate tax noncompliance as a comparatively serious offence (for example, McIntosh & Veal, 2001; and Gupta, 2006; 2007). This can have serious implications for the tax authority. If taxpayers perceive tax offences as less serious than, for example, a speeding fine that may attract a $40 fine; a fine of even a hundred dollars for minor tax noncompliance may be seen as unfair and harsh by taxpayers.[172] Further, taxpayers who view tax offences as not being serious may not be willing to put in the necessary effort to ensure that their tax reporting complies with the tax laws.

Therefore, the tax authority may have to create an awareness of the harm that tax noncompliance causes society as a whole. A community campaign, such as the one adopted to highlight the dangers of speeding and driving while intoxicated, could improve the perception of the seriousness of committing a tax offence. The public should be educated that tax noncompliance is not a victimless crime.[173] The victims should be clearly identified as those citizens needing medical care, social support and education. The tax authority should make the offences equally understood, and the harm that it not only does to the government's ability to manage the country's development and economy, but also the harm inflicted on other New Zealanders who would be forced to carry a heavier load (for example, increased taxes). Promotions and encouragement of the civic responsibility of complying and contributing towards New Zealand's development through education in schools, and through community media campaigns could improve the general public's perception of the seriousness of committing a tax crime. This should not only be targeted at individual's compliance behaviour, but also targeted at discouraging individuals from supporting taxpayers operating in the shadow economy (for example, cash jobs).

8.6 LIMITATIONS

A number of potential limitations of this study should be considered when interpreting the results, and any generalisation of the results to the New Zealand taxpaying population and the population of the NZICA. Some of the limitations have been identified in previous chapters,

[172] Results from Chapter 6 suggest there may be issues of proportionality, that is, most respondents (tax offenders) felt that the penalties imposed for their noncompliance were harsh, unfair and excessive for the type of offence committed. In other words, based on the proportionality principle the penalties were perceived to exceed the gravity or seriousness of the offence (Devos, 2002).

[173] Crimes where there is a class of 'victims' but the crime is not identified with specific individual victims. Tax, welfare and bank frauds would be considered in this category (Gupta, 2007).

and steps were taken in each case to reduce or mitigate their effects on the results of this research.

One of the major criticisms of survey research is the potential for nonresponse bias, which is common in most surveys. The survey was distributed to 1,000 randomly selected taxpayers and tax agents, resulting in 21 percent and 19 percent response rates, respectively. Nonresponse bias is concerned with the possible responses of recipients who did not complete and return the survey instrument, which can only be estimated. The limitations inherent in nonresponses were discussed in Chapter 5. It was expected that due to the sensitive and personal nature of the questionnaire, people would be deterred from participating in this survey. This is especially apparent in the web-based survey, where concerns were raised by prospective respondents as to whether the author would be able to link the responses back to their firms. All practical actions were taken to reduce nonresponse bias, including adopting Dillman's (2000) guidelines, and comparing the responses of early respondents with late respondents, to ensure that nonresponse bias is not a problem.

Another limitation identified is the relatively small sample size for each sample group. An observed population sample of 180 respondents for the taxpayer group and 164 respondents for the tax agent group were obtained for the study. However, the methodological approach applied (SEM using PLS-Graph) for analysing the survey data for this study is suitable for smaller samples. Based on the PLS-Graph's prescription, the required sample size for the current research models is a minimum of 130 cases (Chin, 1998). Therefore, the sample size of 180 for the taxpayer sample and 164 for the tax agent sample were considered more than adequate for this study.

Data for this study was collected using survey instruments based on self-reports. The limitations associated with self-reports were discussed in Chapter 5. These include: self-presentation concerns; socially desirable responses; honesty in responses; poor memory; and responses not reflecting actual behaviour. While most of these are widely accepted limitations inherent in self-reports, attempts were made to minimise the effects of this bias, which were also discussed in Chapter 5. In brief, this includes adhering strictly to Dillman's (2000) tailored design approach during the questionnaire development process and providing complete anonymity and confidentiality to potential respondents. Further, the nonresponse analysis carried out on the data revealed that there were no problems with response bias in either of the sample groups.

Self-reported past compliance behaviour was used as a proxy for actual compliance behaviour. Also, all the study variables are self-reported measures. Efforts were made to

secure actual taxpayer compliance data from the New Zealand tax authority. A process was developed which would safeguard taxpayers' confidentiality and anonymity. Further, the author was also prepared to cover any costs associated with extracting the data and mailing out the questionnaire to randomly selected taxpayers. However, the request was denied and the author was forced to choose the next best alternative method, which is based on self-reports. Obtaining 'hard' empirical data on tax compliance has been a constant challenge for researchers (Kirchler, 2007, p.183), leading most to resort to creating their own data. Whilst care was taken to minimise the effects of self-reports, it may still be possible that respondents did not provide truthful answers, or that their responses may not reflect their actual behaviour (that is, past behaviour). Tax compliant (or noncompliant) behaviour, attitudes, and beliefs are unobservable, and therefore, despite its weakness, self-reports are the most practical method for measuring these variables.[174]

The current survey represents a cross-sectional study which essentially only provides a snapshot of respondents' views on compliance behaviour at the time of the survey. Longitudinal studies are more appropriate for examining tax compliance views over a period of time. In defence, the TPB maintains that beliefs and attitudes tend to remain stable over a period of time (Fishbein and Ajzen, 1975; Ajzen, 1991), and as such, the beliefs and attitudes expressed by the respondents may be relevant for a longer period in time.

As with any statistical tools currently available, PLS modelling is also known to have its bias in obtaining parameter estimates. SEM with PLS is known to underestimate the path coefficient between latent constructs in the structural models, while over-estimating the relationships between the indicators and their latent constructs. However, the estimates will be asymptotically correct with a large sample size and a large number of indicators per latent variable (Lohmoller, 1989; and Chin, 1998). In terms of the current research model, the sample is comparatively large (in terms of the methodology applied), and all constructs are measured by multiple indicators.[175]

A large volume of literature is available on tax compliance; however, due to this volume, the time limit for completing this thesis, and the limited resources available for this study, it was not practicable or possible to locate and review every relevant article available. As a

[174] Tax paying behaviour (or activity) is unobservable, but can be determined by compliance records held by the tax authority, which can, however, only indicate noncompliance that was detected. Also, similar studies have used self-reports (Bobek & Hatfield, 2003; Trivedi et al., 2005; and Saad, 2009; 2011).

[175] Large numbers of indicators were developed for each construct; however, during the validation of the measurement model, a number of indicators were removed. Nonetheless, most constructs have an average of three measures after the validation process.

result, the search for materials was limited to published articles available in the English language. This may result in some important research being omitted and the effect of this on the outcome of the current research is unknown.

A final weakness of this study is the timing difference in the distribution of the two survey instruments which were delivered in different tax years. Whilst it was intended that these survey instruments were distributed at around the same time, this was not possible for a number of reasons, including the resignation of the computer analyst who assisted with the development of the web-based survey at a crucial time and the author undertaking this thesis part-time. Testing the accessibility of the survey instruments on various personal computers in different locations in New Zealand also took longer than expected. The impact of this is unknown, and therefore any comparisons made between the two groups should be interpreted with caution. Further, there is a gap between the time the survey data was collected (that is, in 2006 and 2007), and the time the results of the survey will be disseminated (the submission date of the current thesis). However, this is unavoidable due to the author completing the research as a part-time student with full time work commitments and a family.

In summary, all practical attempts to minimise some of the limitations listed above were carried out, which should improve the generalisability of the statistical findings. Further, most of the limitations acknowledged above are unavoidable, and are inherent in most similar types of research. Nonetheless, the limitations do not diminish the relevance of the findings or the contributions made by the current research, as long as care is taken in applying the results to other situations.

8.7 IMPLICATIONS FOR FUTURE RESEARCH

Despite the large body of research currently available on tax compliance behaviour, no single study has been capable of producing the unambiguous knowledge that tax authorities would find useful on a practical level. Therefore, there is a continuous need to contribute towards the body of knowledge in smaller steps, with the new focus on a combination of economic and noneconomic factors. The research models employed in the current study have attempted to explain tax compliance behaviour of taxpayers and tax agents and in the process have provided several possibilities for future research.

The result of this study illustrates that the TPB, which is based on attitudes and behaviour, offers a useful framework for exploring tax compliance issues. Further, results of a number of meta-analytic reviews, although not based on tax compliance behaviour, clearly indicate that TPB has been used successfully in a large number of studies in the behavioural domain to

predict behaviour (for example, Armitage & Conner, 2001). Bobek & Hatfield (2003), Trivedi et al. (2005), and Saad (2009; 2011) all found the TPB to be capable of explaining tax compliance (or noncompliance) behaviour. Despite this, surprisingly few attempts were made to use TPB as the underlying framework for predicting tax compliance behaviour. Therefore, more research applying the TPB is needed in tax compliance research to explore factors that are likely to strongly influence intentions to comply (or not comply) and compliance (or noncompliance) behaviour.

This study compared the responses of two separate groups of taxpayers (taxpayers and tax agents), and provided evidence that factors that influence tax compliance behaviour are not generic to all taxpayers. The results clearly suggest that different sub-groups of taxpayers are motivated by different factors, and therefore there is scope to extend this study to include the effects of various determinants of tax compliance to other sub-groups of taxpayers (for example, business taxpayers or those subgroups who are more prone to take risks or have the opportunity to avoid tax). This may provide the tax authority with the tools to tailor its services according to the type of taxpayers involved, and not simply based on the attributes of the generic taxpayer.

Replication of previous studies also makes a useful contribution to the literature. Hessing et al. (1988, p.534) maintain that "the most convincing evidence that a variable plays a key role in affecting taxpayer decisions to evade taxes is replication of findings across methodologies; otherwise we cannot be sure if the findings reflect the state of nature, or simply an artefact of the research method used." Therefore future replication of this study using other methodological approaches could well make a valid contribution to the tax compliance literature (McKerchar, 2010).

Mediating effects can easily be included in a PLS Path Model. The TPB asserts that socio-demographic variables are not capable of influencing behavioural intentions or behaviour directly. Rather, these variables mediate their effects through one of the key constructs of the TPB Model. There are opportunities to test this theory, and socio-demographic variables could be included in future research models as mediating variables. Variables that have moderating effects could also be added to extend the current research.

This study illustrates the importance of non-legal or informal sanctions on behavioural intentions and ultimately behaviour. However, there is a dearth of literature (until recently) relating to the study of the deterrent effects of informal sanctions, as most deterrence research has focused on the effects of legal or formal sanctions on tax compliance behaviour. The number of recent studies using noneconomic or informal sanctions has been increasing over

recent years. Recent studies refer to these noneconomic variables and informal sanctions collectively as tax morale (Kirchler, 2007; Kornhauser, 2007; Torgler, 2007; and Traxler, 2010). A more common definition of tax morale is "the intrinsic motivation to pay taxes" (Frey, 1997; Feld & Frey, 2007; and Torgler; 2007). Currently, the literature seems ambiguous in respect to the definition given to tax morale. Therefore, there is a clear need for future studies to attempt to define and standardise this terminology, which is increasingly seen to be an important factor in compliance behaviour.

Another important and interesting area for future research is an in-depth study on the compliance behaviour of taxpayers who have been penalised for noncompliant behaviour. The results of this study show that the majority of respondents subjected to the CPR have a negative impression regarding their experience with the process. However, despite this outcome, most respondents indicated that being penalised have deterred them from future noncompliance.[176] Nonetheless, this area of research could provide the tax authority with a better understanding of how to manage the penalties process, in order to reduce some of the negative attitudes surrounding the process. Over time, these negative attitudes could negatively influence the level of tax compliance (Tyler, 2010).

There is overwhelming evidence from the current study, and from prior studies, indicating that tax noncompliance is perceived by most New Zealanders as not a serious offence, compared to other similar civil offences (McIntosh & Veal, 2001; Birch et al., 2003; and Gupta, 2006; 2007). Therefore, another rewarding area of research could focus on how or why taxpayers develop this view. It would also be useful to determine whether there is any relationship between perceived seriousness of tax noncompliance and societal norms; considering that a relatively recent study by McIntosh and Veal (2001) reported that 79 percent of respondents believe that New Zealand, as a society, is increasingly accepting noncompliant behaviour from others.

Another area that may have implications for future research is to use actual compliance data to measure behaviour. Tax paying behaviour is not observable and self-reported behaviour or responses to hypothetical scenarios may not reflect actual behaviour. Therefore, to increase the validity of the results, future research should attempt to use actual compliance data held by the tax authorities, which would reflect the actual behaviours of taxpayers. Tax authorities should actively support and promote independent research on tax compliance behaviour. The outcome of such research could only increase their understanding of taxpayers' compliance behaviour.

[176] A recent study carried out by Devos (2009) supports this finding.

A methodological contribution from this study is the introduction of the PLS methodology in the field of tax compliance behaviour. The SEM approach, with PLS, is a powerful statistical technique, and has been widely used in a variety of fields, from adoption of technology to marketing. Arguably, the PLS method has expanded the scope of SEM analysis, signalling a future change of focus in empirical research. Further conceptual development and empirical validation of this approach should therefore play an important role in future research (Gotz et al., 2010). However, only a few studies in the field of tax compliance behaviour have applied this approach. This may be because the SEM with PLS technique is still in its infancy, and more use in future will give the PLS methodology greater legitimacy, and will provide future researchers with more confidence in using this new and powerful technique.

In conclusion, further research is still needed to confirm the findings of this study and to determine a practical approach to include them in policy tools. With this in mind, this section has identified opportunities for future research, which could increase our understanding of taxpayers' behaviour. Despite the large body of literature, understanding tax compliance behaviour remains a challenge. As noted by McKerchar (2003a, p. 214):

> "There is no doubt that understanding taxpayer compliance remains a challenging problem for tax authorities and researchers alike. It is felt that by approaching the problem strategically, analysing its components and how they interact, tax authorities and researchers will be better placed to understand taxpayer behaviour, and in turn, to identify and develop the specific measures needed to efficiently and effectively improve compliance."

8.8 CONCLUDING COMMENTS

Taxpayer compliance behaviour remains a universal challenge for tax authorities, policymakers and researchers despite the large body of literature. However, as noted by McKerchar (2003a), only by addressing different aspects of the compliance problem and applying different methodologies can any progress be made in understanding the complexity of tax compliance behaviour. In response, the current study has applied theories and methodological approaches that have been successfully used in behavioural research, but not widely applied in tax compliance research. Consequently, it is the author's belief that the current study has made a worthwhile contribution by offering additional insights into the determinants of behavioural intentions and tax compliance behaviour.

References

Adams, J. S. (1963). Towards an Understanding of Inequity. *Journal of Abnormal and Social Psychology, 67*, 422-436.

Adams, J. S. (1965). Inequity in Social Exchange. *Advances in Experimental Social Psychology, 62*, 335-343.

Agnew, C. R. (1998). Modal versus Individually-Derived Beliefs about Condom Use: Measuring the Cognitive Underpinnings of the Theory of Reasoned Action. *Psychology and Health, 13*(2), 271-287.

Aitken, S. S., & Bonneville, L. (1980). *A General Taxpayer Opinion Survey*. Washington, DC: IRS, Office of Planning and Research.

Ajzen, I. (1985). From Intentions on to Actions: A Theory of Planned Behavior. In J. Kuhl & J. Beckman (Eds.), *Action-control: From Cognition to Behavior*. Heidelberg: Springer.

Ajzen, I. (1988). *Attitudes, Personality, and Behavior*. Milton Keynes, UK: Open University Press.

Ajzen, I. (1991). The Theory of Planned Behavior. *Organizational Behavior and Human Decision Processes, 50*(2), 179-211.

Ajzen, I. (2001). Nature and Operation of Attitudes. *Annual Review of Psychology, 52*, 27-58.

Ajzen, I. (2002a). *Behavioral Interventions Based on the Theory of Planned Behaviour*. Retrieved from http://www.people.umass.edu/aizen/pdf/tpb/.intervention.pdf.

Ajzen, I. (2002b). *Constructing a TPB Questionnaire: Conceptual and Methodological Considerations*. Retrieved from http://www.people.umass.edu/aizen/pdf/tpb.measurement .pdf.

Ajzen, I. (2004). *Behavioral Intervention Based on the Theory of Planned Behaviour.* Retrieved from http:www.people.umass.edu/aizen/pdf/tpb/.intervention.pdf.

Ajzen, I. (2010). *Predicting and Changing Behaviour: A Reasoned Action Approach*. New York: Psychology Press.

Ajzen, I. (2012). Martin Fishbein's Legacy: The Reasoned Action Approach. *The ANNALS of the American Academy of Political and Social Science, 640*(1), 11-27.

Ajzen, I., & Driver, B. L. (1991). Prediction of the Leisure Participation from Behavioural, Normative and Control Beliefs: An Application of the Theory of Planned Behavior. *Leisure Sciences, 13*, 185-204.

Ajzen, I., & Fishbein, M. (1980). *Understanding Attitudes and Predicting Social Behaviour*. Englewood Cliffs, NJ: Prentice-Hall.

Ajzen, I., & Fishbein, M. (2005). Theory-based Behavior Change Interventions: Comments on Hobbis and Sutton. *Journal of Health Psychology, 10*(1), 27-31.

Ajzen, I., & Fishbein, M. (2008). Scaling and Testing Multiplicative Combinations in the Expectancy–Value Model of Attitudes. *Journal of Applied Social Psychology, 38*(9), 2222-2247.

Ajzen, I., & Madden, T. J. (1986). Prediction of Goal-directed Behaviour: Attitudes, Intentions, and Perceived Behavioral Control. *Journal of Experimental Social Psychology, 22*, 453-474.

Albers, S. (2010). PLS and Success Factor Studies in Marketing. In V. Esposito Vinzi, W. W. Chin, J. Henseler & H. Wang (Eds.), *Handbook of Partial Least Squares: Concepts, Methods and Applications* (pp. 409-425). Heidelberg: Springer.

Allingham, M. G., & Sandmo, A. (1972). Income Tax Evasion: A Theoretical Analysis. *Journal of Public Economics, 1*, 323-338.

Allison, P. D. (2001). *Missing Data*. Thousand Oaks, CA: Sage Publications, Inc.

Alm, J. (1999). Tax Compliance and Administration. In W. Bartley Hildreth & J. A. Richardson (Eds.), *Handbook on Taxation* (pp. 741-768). New York: Marcel Dekker.

Alm, J. (2012). Measuring, Explaining, and Controlling Tax Evasion: Lessons from Theory, Experiments, and Field Studies. *International Tax Public Finance, 19*, 54-77.

Alm, J., Bahl, R., & Murray, M. N. (1990). Tax Structure and Tax Compliance. *The Review of Economics and Statistics, 72*(4), 603-613.

Alm, J., Cherry, T., Jones, M., & McKee, M. (2010). Taxpayer Information Assistance Services and Tax Compliance Behavior. *Journal of Economic Psychology, 31*, 577-586.

Alm, J., & Embaye, A. (2011). *Using Panel Methods to Estimate Shadow Economies Around the World, 1984-1986*. New Orleans, LA: Tulane University.

Alm, J., McClelland, G. H., & Schulze, W. D. (1992). Why Do People Pay Taxes? *Journal of Public Economics, 48*, 21-48.

Alm, J., McClelland, G. H., & Schulze, W. D. (1999). Changing the Social Norm of Tax Compliance by Voting. *Kyklos, 52*(2), 141-171.

Alm, J., Sanchez, I., & De Juan, A. (1995). Economic and Non-economic Factors in Tax Compliance. *Kyklos, 48*, 3-18.

Alm, J., & Torgler, B. (2006). Culture Differences and Tax Morale in the United States and Europe. *Journal of Economic Psychology, 27*, 224-246.

Andreoni, J., Erard, B., & Feinstein, J. (1998). Tax Compliance. *Journal of Economic Literature, 36*(2), 818-860.

Armitage, C. J., & Christian, J. (2004). From Attitudes to Behavior: Basic and Applied Research on the Theory of Planned Behavior. In C. J. Armitage & J. Christian (Eds.), *Planned Behavior: The Relationship Between Human Thought and Action* (pp. 1-12). New Brunswick, NJ: Transaction Publishers.

Armitage, C. J., & Conner, M. (1999a). Predictive Validity of the Theory of Planned Behaviour: The Role of Questionnaire Format and Social Desirability. *Journal of Community & Applied Social Psychology, 9*(4), 261-272.

Armitage, C. J., & Conner, M. (1999b). Distinguishing Perceptions of Control from Self-Efficacy: Predicting Consumption of a Low-fat Diet Using the Theory of Planned Behaviour. *Journal of Applied Social Psychology, 29*, 72-90.

Armitage, C. J., & Conner, M. (2001). Efficacy of the Theory of Planned Behaviour: A Meta-Analytic Review. *British Journal of Social Psychology, 40*(4), 471-499.

Armstrong, J. S., & Overton, T. S. (1977). Estimating Non-Response Bias in Mail Surveys. *Journal of Marketing Research, 14*(3), 396-402.

Ayres, I., & Braithwaite, J. (1992). *Responsive Regulation: Transcending the Deregulation Debate*. New York: Oxford University Press.

Backhause, K., Erichson, B., Plinke, W., & Weiber, R. (2003). *Multivariate Analysemethoden: Eine Anwendungsorientierte Einfuhrung*. Berlin: Springer.

Bagozzi, R. P., & Fornell, C. (1982). Theoretical Concepts, Measurement and Meaning. In C. Fornell (Ed.), *A Second Generation of Multivariate Analysis* (Vol. 2, pp. 5-23). New York: Praeger.

Bagozzi, R. P., & Yi, Y. (1988). On the Evaluation of Structural Equation Models. *Journal of the Academy of Marketing Science, 16*(1), 74-94.

Barclay, D., Thompson, R., & Higgins, C. (1995). The Partial Least Squares (PLS) Approach to Causal Modeling: Personal Computer Adoption and Use as an Illustration. *Technology Studies, 2*(2), 285-309.

Bardach, E. (1989). Moral Suasion and Taxpayer Compliance. *Law and Policy, 11*(1), 49-69.

Barroso, C., Carrion, G. C., & Roldan, J. L. (2010). Applying Maximum Likelihood and PLS on Different Sample Sizes: Studies on SERVQUAL Model and Employee Behaviour Model. In V. Esposito Vinzi, W. W. Chin, J. Henseler & H. Wang (Eds.), *Handbook of Partial Least Squares: Concepts, Methods and Applications* (pp. 427-447). Heidelberg: Springer.

Beck, L., & Ajzen, I. (1991). Predicting Dishonest Actions Using the Theory of Planned Behavior. *Journal of Research in Personality, 25*(3), 285-301.

Becker, G. (1968). Crime and Punishment: An Economic Approach. *Journal of Political Economy, 76*(2), 169-217.

Becker, G. S. (1972). Schooling and Inequality from Generation to Generation: Comment. *The Journal of Political Economy, 80*, S252-S255.

Bentler, P. M., & Speckart, G. (1979). Models of Attitude-Behavior Relations. *Psychological Review, 86*, 452-464.

Bergman, M. (2002). Who Pays for Social Policy? A Study on Taxes and Trust. *Journal of Social Policy, 31*(2), 289-305.

Birch, A., Peters, T., & Sawyer, A. J. (2003). New Zealanders' Attitudes Towards Tax Evasion: A Demographic Analysis. *New Zealand Journal of Taxation Law and Policy, 9*(1), 65-109.

Blake, J., & Davis, K. (1964). Norms, Values and Sanctions. In R. Faris (Ed.), *Handbook of Modern Sociology* (pp. 456-484). Chicago: Rand McNally.

Blumenthal, M., & Slemrod, J. (1992). The Compliance Cost of the U.S. Individual Income Tax System: A Second Look After Tax Reform. *National Tax Journal, 45*(2), 185-202.

Bobek, D., & Hatfield, R. C. (2001). The Effect of Policy Objectives, Complexity, and Self-interest on Individuals' Comparative Fairness Judgments of a Flat Tax. *Advances in Taxation, 13*, 1-25.

Bobek, D., & Hatfield, R. C. (2003). An Investigation of the Theory of Planned Behavior and the Role of Moral Obligation in Tax Compliance. *Behavioral Research in Accounting, 15*, 13-38.

Bobek, D. D., Hatfield, R. C., & Wentzel, K. (2007a). An Investigation of Why Taxpayers Prefer Refunds: A Theory of Planned Behavior Approach. *The Journal of the American Taxation Association, 29*(1), 93-111.

Bobek, D., Roberts, R., & Sweeney, J. T. (2007b). The Social Norms of Tax Compliance: Evidence from Australia, Singapore, and the United States. *Journal of Business Ethics, 74*(1), 49-64.

Bogardus, E. S. (1928). *Immigration and Race Attitudes*. Boston: DC Heath and Company.

Bollen, K. A. (1989). *Structural Equations with Latent Variables*. New York: Wiley.

Boβow-Thies, S., & Albers, S. (2010). Application of PLS in Marketing: Content Strategies on the Internet. In V. Esposito Vinzi, W. W. Chin, J. Henseler & H. Wang (Eds.), *Handbook of Partial Least Squares: Concepts, Methods and Applications* (pp. 589-604). Heidelberg: Springer.

Braithwaite, V. (2001). *The Community Hopes, Fears and Actions Survey: Goals and Measures.* Centre for Tax System Integrity, (Working Paper No 2). Canberra: The Australian National University.

Braithwaite, V. (2003a). Dancing with Tax Authorities: Motivational Postures and Non-compliant Actions. In V. Braithwaite (Ed.), *Taxing Democracy: Understanding Tax Avoidance and Evasion* (pp. 15-39). Aldershot, England: Ashgate Publishing.

Braithwaite, V. (2003b). A New Approach to Tax Compliance. In V. Braithwaite (Ed.), *Taxing Democracy: Understanding Tax Avoidance and Tax Evasion* (pp. 1-11). Aldershot: Ashgate Publishing.

Braithwaite, V., Braithwaite, J., Gibson, D., & Makkai, T. (1994). Regulatory Styles, Motivational Postures and Nursing Home Compliance. *Law & Policy, 16*(4), 363-394.

Braithwaite, V., & Job, J. (2003). *The Theoretical Base for the ATO Compliance Model, Research Note 5*. Retrieved from http://digitalcollections.anu.edu.au/handle/1885 /42101.

Braithwaite, V., Murphy, K., & Reinhart, M. (2007). Taxation Threat, Motivational Postures, and Responsive Regulation. *Law and Policy, 29*(1), 137-158.

Braithwaite, V., & Reinhart, M. (2005). *Preliminary Findings and Codebook for the Australian Tax System-Fair or Not Survey (ATSFONS).* Centre for Tax System Integrity (Working Paper No 79). Canberra: Australian National University.

Braithwaite, V., Reinhart, M., Mearns, M., & Graham, R. (2001). *Preliminary Findings from the Community Hopes, Fears and Actions Survey: Goals and Measures*. Centre for Tax System Integrity, (Working Paper No 3). Canberra: The Australian National University.

Brehm, J. (1993). *The Phantom Respondents: Opinion Surveys and Political Representation*. Ann Arbor: University of Michigan Press.

Brooks, N., & Doob, A. N. (1990). Tax Evasion: Searching for a Theory of Compliant Behavior. In M. L. Friedland (Ed.), *Securing Compliance: Seven Case Studies*. Toronto: University of Toronto Press.

Buchan, H. F. (2005). Ethical Decision Making in the Public Accounting Profession: An Extension of Ajzen's Theory of Planned Behavior. *Journal of Business Ethics, 61*(2), 165-181.

Bullock, H. E., Harlow, L. L., & Mulaik, S. A. (1994). Causation Issues in Structural Equation Modeling Research. *Structured Equation Modeling, 1*(3), 253-267.

Burnkrant, R. E., & Page Jr, T. J. (1988). The Structure and Antecedents of the Normative and Attitudinal Components of Fishbein's Theory of Reasoned Action. *Journal of Experimental Social Psychology, 24*(1), 66-89.

Burton, M. (2008). *The Commissioner's Compliance Strategy: Compliance Pyramid to Compliance Diamond to Compliance Cube?* Paper presented at the Australasian Tax Teachers Association (ATTA) Annual Conference, University of Tasmania.

Cahalan, D. (1968). Correlates of Respondent Occurring in the Denver Validity Study. *Public Opinion Quarterly, 32*(4), 607-622.

Campbell, D. T., & Fiske, D. W. (1959). Convergent and Discriminant Validation by the Multitrait-Multimethod Matrix. *Psychological Bulletin, 56*(2), 81-105.

Cannell, C. F., & Fowler, F. J. (1967). Comparison of a Self-Enumerative Procedure and a Personal Interview: A Validity Study. *Public Opinion Quarterly, 27*(2), 250-264.

Caragata, P. J. (1998). *Why Are Your Taxes So High?* Wellington: Seascape Press.

Carnes, G. A., & Englebrecht, T. D. (1995). An Investigation of the Effect of Detection Risk Perceptions, Penalty Sanctions, and Income Visibility on Tax Compliance. *The Journal of the American Taxation Association, 17*(1), 26-41.

Casper, J. D., Tyler, T., & Fisher, B. (1988). Procedural Justice in Felony Cases. *Law and Society Association, 3*(3), 483-508.

Chang, M. K. (1998). Predicting Unethical Behaviour: A Comparison of the Theory of Reasoned Action and the Theory of Planned Behaviour. *Journal of Business Ethics, 17*, 1825-1834.

Chang, O. H., Nichols, D. R., & Schultz, J. J. (1987). Taxpayer Attitudes Toward Tax Audit Risk. *Journal of Economic Psychology, 8*(3), 299-309.

Chernick, M. R. (2008). *Bootstrap Methods: A Guide for Practitioners and Researchers*. Hoboken, NJ: Wiley & Sons.

Chin, W. W. (1998a). Issues and Opinion on Structural Equation Modeling. *Management Information Systems Quarterly, 22*(1), 7-15.

Chin, W. W. (1998b). The Partial Least Squares Approach of Structural Equation Modeling. In G. A. Marcoulides (Ed.), *Modern Methods for Business Research* (pp. 295-336). Mahwah, NJ: Lawrence Erlbaum.

Chin, W. W. (2009). *PLS-Path Modeling*. Retrieved from http:/disc-nt.cba.uh.edu/chin/Chin IntroPLS2009slide.pdf.

Chin, W. W. (2010). How to Write Up and Report PLS Analysis. In V. Esposito Vinzi, W. W. Chin, J. Henseler & H. Wang (Eds.), *Handbook of Partial Least Squares: Concepts, Methods and Applications* (pp. 655-690). Heidelberg: Springer.

Chin, W. W., & Dibbern, J. (2010). An Introduction to a Permutation Based Procedure for Multi-Group PLS Analysis: Results of Tests of Differences on Simulated Data and a Cross Cultural Analysis of the Sourcing of Information System Services Between Germany and the USA. In V. Esposito Vinzi, W. W. Chin, J. Henseler & H. Wang (Eds.), *Handbook of Partial Least Squares: Concepts, Methods and Applications* (pp. 171-193). Heidelberg: Springer.

Chin, W. W., & Newsted, P. R. (1999). Structural Equation Modeling Analysis with Small Samples Using Partial Least Squares. In R. Hoyle (Ed.), *Statistical Strategies for Small Sample Research* (pp. 307-341). Thousand Oaks, CA: Sage Publications, Inc.

Christensen, A. L., & Hite, P. A. (1997). A Study of the Effect of Taxpayer Risk Perceptions on Ambiguous Compliance Decisions. *Journal of the American Taxation Association, 19*(1), 1-18.

Chung, J., & Trivedi, V. U. (2003). The Effect of Friendly Persuasion and Gender on Tax Compliance Behavior. *Journal of Business Ethics, 47*(2), 133-145.

Churchill Jr, G. A. (1979). A Paradigm for Developing Better Measures of Marketing Constructs. *Journal of Marketing Research, 16*(1), 64-73.

Cialdini, R., & Trost, M. (1998). Social Influences: Social Norms, Conformity, and Compliance. In D. Gilbert, S. Fiske & G. Lindzey (Eds.), *The Handbook of Social Psychology*. New York: Oxford University Press.

Cialdini, R. B., Kallgren, C. A., & Reno, R. R. (1991). A Focus Theory of Normative Conduct: A Theoretical Refinement and Reevaluation of the Role of Norms in Human Behavior. In M. P. Zanna (Ed.), *Advances in Experimental Social Psychology* (Vol. 24, pp. 201-234). New York: Academic Press.

Clark, J., & Tifft, L. (1966). Polygraph and Interview Validation of Self-Report Deviant Behavior. *American Sociological Review, 31*, 516-523.

Clausen, A. R. (1968). Response Validity: Vote Report. *Public Opinion Quarterly, 32*(4), 588-606.

Cobanoglu, C., Warde, B., & Moreo, P. J. (2001). A Comparison of Mail, Fax and Web-Based Survey Methods. *International Journal of Market Research, 43*(4), 441-352.

Coffield, J. (1970). *A Popular History of Taxation*. London: Longman.

Cohen, J. (1988). *Statistical Power Analysis for the Behavioral Sciences*. Hillsdale, NJ: Lawrence Erlbaum.

Cohen, J., & Cohen, P. (1983). *Applied Multiple Regression/Correlations Analysis for the Behavioral Sciences*. Hillsdale, NJ: Lawrence Erlbaum.

Collier, J. E., & Bienstock, C. C. (2007). An Analysis of How Non-Response Error is Assessed in Academic Marketing Research. *Marketing Theory, 7*(2), 163-183.

Collins, J. H., Milliron, V. C., & Toy, D. R. (1992). Determinants of Tax Compliance: A Contingency Approach. *The Journal of the American Taxation Association, 14*(2), 1-29.

Committee of Experts. (1998). Tax Compliance. *A Report to the Treasurer and Minister of Revenue*. Wellington, NZ.

Conner, M., & Armitage, C. J. (1998). Extending the Theory of Planned Behaviour: A Review and Avenues for Further Research. *Journal of Applied Social Psychology, 28*, 1430-1464.

Conner, M., Lawton, R., Parker, D., Chorlton, K., Manstead, A. S. R., & Stradling, S. G. (2007). Application of the Theory of Planned Behaviour to the Prediction of Objectively Assessed Breaking of Posted Speed Limits. *British Journal of Psychology, 98*(3), 429-453.

Conner, M., & Norman, P. (2001). Can the Theory of Planned Behavior Explain Patterns of Health Behavior Change? *Health Psychology, 20*(1), 12-19.

Conner, M., & Sparks, P. (1996). The Theory of Planned Behaviour and Health Behaviours. In M. Conner & P. Norman (Eds.), *Predicting Health Behaviour* (pp. 121-162). Buckingham: Open University Press.

Conner, M., & Sparks, P. (2005). Theory of Planned Behaviour and Health Behaviour. In M. Conner & P. Norman (Eds.), *Predicting Health Behaviour: Research and Practice with Social Cognition Models* (pp. 170-222). Philadelphia: Open University Press.

Cool, K., Dierickx, I., & Jemison, D. (1989). Business Strategy, Market Structure, and Risk-Return Relationships: A Structural Approach. *Strategic Management Journal, 10*(6), 507-522.

Copeland, P. V., & Harmelink, P. J. (1995). Using Taxpayer Perceptions of Fairness To Redesign the Federal Income Tax Structure. *Advances in Taxation, 7*, 43-72.

Couper, M. P. (2000). Web-Surveys: A Review of Issues and Approaches. *Public Opinion Quarterly, 64*(4), 464-494.

Couper, M. P., Traugott, M. W., & Lamina, M. J. (2001). Web Survey Design and Administration. *Public Opinion Quarterly, 65*, 230-253.

Cowell, F. A. (1990). *Cheating the Government*. Cambridge, MA: MIT Press.

Creswell, J. W. (2003). *Research Design: Qualitative, Quantitative, and Mixed Method Approaches*. Thousand Oaks, CA: Sage Publications, Inc.

Cuccia, A. D. (1994). The Economics of Tax Compliance: What Do We Know & Where Do We Go? *Journal of Accounting Literature, 13*, 81-116.

Cullis, J., Jones, P., & Savoia, A. (2012). Social Norms and Tax Compliance: Framing the Decision to Pay Tax. *Journal of Socio-Economics, 41*(2), 159-168.

Cullis, J. G., & Lewis, A. (1997). Why People Pay Taxes: From a Conventional Economic Model to a Model of Social Convention. *Journal of Economic Psychology, 18*, 305-321.

Cunningham, H. A., & Casey, E. F. (1942). *Taxation Laws of New Zealand*. Wellington: Butterworth & Company.

De Juan, A., Lasheras, M. A., & Mayo, R. (1994). Voluntary Tax Compliant Behavior of Spanish Income Tax Payers. *Public Finance, 49*, 90-105.

Decker, S., & Kohfeld, C. W. (1990). Certainty, Severity, and the Probability of Crime: A Logistic Analysis. *Policy Studies Journal, 19*(1), 2-21.

Deutsch, M., & Gerard, H. B. (1955). A Study of Normative and Informational Social Influences Upon Individual Judgement. *Journal of Abnormal and Social Psychology, 51(3)*, 629-636.

Devos, K. (2002). Penalties and Sanctions for Australian Taxation Crimes and the Implications for Taxpayer Compliance. *Australian Tax Forum, 17*(3), 257-286.

Devos, K. (2004). Penalties and Sanctions for Taxation Offences in New Zealand: Implications for Tax Payer Compliance and Tax Policy. *New Zealand Journal of Taxation Law and Policy, 10*(3), 212-244.

Devos, K. (2005). The Attitudes of Tertiary Students on Tax Evasion and the Penalties for Tax Evasion: A Pilot Study and Demographic Analysis. *e -Journal of Tax Research, 3*(2), 222-273.

Devos, K. (2007). Measuring and Analysing Deterrence in Taxpayer Compliance Research. *Journal of Australian Taxation, 10*(2), 182-219.

Devos, K. (2008). Tax Evasion Behaviour and Demographic Factors: An Exploratory Study in Australia. *Revenue Law Journal, 18*(1), 1-43.

Devos, K. (2009). An Investigation Into Australian Personal Tax Evaders' – Their Attitudes Towards Tax Evasion and the Penalties for Tax Evasion. *Revenue Law Journal, 19(1), 1-41*.

Dibbern, J., & Chin, W. W. (2005). Multi-Group Comparison: Testing a PLS Model on the Sourcing of Application Software Services across Germany and the USA Using A Permutation Based Algorithm. In F. W. Bliemel, A. Eggert, G. Fassott & J. Henseler (Eds.), *Handbuch PLSP fadmodellierung* (pp. 135-159). Stuttgart: Schäffer-Poeschel.

Dibbern, J., & Chin, W. W. (2010). An Introduction to a Permutation Based Procedure for Multi-Group PLS Analysis: Results of Tests of Differences on Simulated Data and a Cross Cultural Analysis of the Sourcing of Information System Services Between Germany and the USA. In V. Esposito Vinzi, W. W. Chin, J. Henseler & H. Wang (Eds.), *Handbook of Partial Least Squares: Concepts, Methods and Applications* (pp. 171-193). Heidelberg: Springer.

Dillman, D. A. (1978). *Mail and Telephone Surveys: The Total Design Method*. New York: Wiley.

Dillman, D. A. (2000). *Mail and Internet Surveys: The Tailored Design Method*. New York: Wiley.

Donald, I., & Cooper, S. R. (2001). A Facet Approach to Extending the Normative Component of the Theory of Reasoned Action. *British Journal of Social Psychology, 40*, 599-621.

Duarte, P. A. O., & Raposo, M. L. B. (2010). A PLS Model to Study Brand Preference: An Application to the Mobile Phone Market. In V. Esposito Vinzi, W. W. Chin, J. Henseler & H. Wang (Eds.), *Handbook of Partial Least Squares: Concepts, Methods and Applications* (pp. 449-485). Heidelberg: Springer.

Dubin, R. (1976). Theory Building in Applied Areas. In M. D. Dunnette (Ed.), *Handbook of Industrial and Organisational Psychology* (pp. 17-26). Chicago: Rand McNally College.

Dubin, A. J, (2012). *The Causes and Consequences of Income Tax Noncompliance*. New York: Springer.

Eagly, A. H., & Chaiken, S. (1993). *The Psychology of Attitudes*. Orlando, FL: Harcourt Brace Jovanovich College Publishers.

Efebera, H., Hayes, D. C., Hunton, J. E., & O'Neil, C. (2004). Tax Compliance Intentions of Low-income Individual Taxpayers. *Advances in Accounting Behavioral Research, 7*(7), 1-25.

Efron, B. (1987). Better Bootstrap Confidence Intervals. *Journal of American Statistical Association, 82*, 171-200.

Efron, B., & Tibshirani, R. J. (1986). Bootstrap Methods for Standard Errors, Confidence Intervals, and Other Measures of Statistical Accuracy. *Statistical Science, 1*(1), 54-77.

Efron, B., & Tibshirani, R. J. (1993). *An Introduction to the Bootstrap. No.57, Monographs on Statistics and Applied Probability*. New York: Chapman and Hall.

Ehrlich, I. (1973). Participation in Illegitimate Activities: A Theoretical and Empirical Investigation. *Journal of Political Economy, 87*(3), 521-565.

Eicher, J. D., Stuhldreher, T. J., & Stuhldreher, W. L. (2002). Men, Women, Taxes and Ethics. *Tax Notes, 97*(3), 401-406.

Eide, E. (1994). *Economics of Crime: Deterrence and the Rational Offender*. Amsterdam: North Holland.

Eisenhauer, J. G. (2006). The Shadow Price of Morality. *Eastern Economic Journal, 32*(3), 437-456.

Elffers, H. (1991). *Income Tax Evasion: Theory and Measurement*. Deventer, Netherlands: Kluwer Academic Publishers.

Elffers, H., Robben, H. S. J., & Hessing, D. J. (1992). On Measuring Tax Evasion. *Journal of Economic Psychology, 13*, 545-567.

Elffers, H., Weigel, R. H., & Hessing, D. J. (1987). The Consequences of Different Strategies for Measuring Tax Evasion Behavior. *Journal of Economic Psychology, 8*(3), 311-337.

Erard, B., & Feinstein, J. S. (1994). Honesty and Evasion in the Tax Compliance Game. *Rand Journal of Economics, 25*(1), 1-19.

Esposito Vinzi, V., Chin, W. W., Henseler, J., & Wang, H. (2010). *Handbook of Partial Least Squares: Concepts, Methods and Applications*. Heidelberg: Springer.

Esposito Vinzi, V., Trinchera, L., & Amato, S. (2010). PLS Path Modeling: From Foundations to Recent Developments and Open Issues for Model Assessments and Improvement. In V. Esposito Vinzi, W. W. Chin, J. Hensler & H. Wang (Eds.), *Handbook of Partial Least Squares: Concepts, Methods and Applications* (pp. 47-82). Heidelberg: Springer.

Falk, R. F., & Miller, N. B. (1992). *A Primer for Soft Modeling*. Akron, Ohio: University of Akron Press.

Feld, L. P., & Frey, B. S. (2002). Trust Breeds Trust: How Taxpayers Are Treated. *Economic of Governance, 3*(2), 87-99.

Feld, L. P., & Frey, B. S. (2007). Tax Compliance as the Result of a Psychological Tax Contract: The Role of Incentives and Responsive Regulation. *Law & Policy, 29*(1), 102-120.

Feld, L. P., & Tyran, J. R. (2002). Tax Evasion and Voting: An Experimental Analysis. *Kyklos, 55*, 197-222.

Fischer, C. M., Wartick, M., & Mark, M. M. (1992). Detection Probability and Taxpayer Compliance: A Review of the Literature. *Journal of Accounting Literature, 11*(1), 1-46.

Fishbein, M. (1963). An Investigation of the Relationships Between Beliefs about an Object and the Attitude Toward That Object. *Human Relations, 16*, 233-240.

Fishbein, M. (1967a). Attitude and the Prediction of Behavior. In M. Fishbein (Ed.), *Readings in Attitude Theory and Measurement* (pp. 477-492). New York: Wiley.

Fishbein, M. (1967b). A Consideration of Beliefs and Their Role in Attitude Measurement. In M. Fishbein (Ed.), *Readings in Attitude Theory and Measurement* (pp. 477-492). New York: Wiley.

Fishbein, M., & Ajzen, I. (1975). *Belief, Attitude, Intention and Behavior: An Introduction to Theory and Research*. Reading, MA: Addison-Wesley.

Fishbein, M., & Ajzen, I. (2010). *Predicting and Changing Behaviour: The Reasoned Action Approach*. New York: Psychology Press.

Fjeldstad, O. H., & Semboja, J. (2001). Why People Pay Taxes: The Case of the Development Levy in Tanzania. *World Development, 29*(12), 2059-2074.

Fornell, C. (1982). A Second Generation of Multivariate Analysis: An Overview. In C. Fornell (Ed.), *A Second Generation of Multivariate Analysis* (Vol. 1, pp. 1-21). New York: Praeger.

Fornell, C., & Bookstein, F. L. (1982). Two Structured Equation Models: LISREL and PLS Applied to Consumer Exit-Voice Theory. *Journal of Marketing Research, 19*(4), 440-452.

Fornell, C., & Cha, J. (1994). Partial Least Squares. In R. Bagozzi (Ed.), *Advanced Methods of Marketing* (pp. 52-78). Cambridge: Blackwell.

Fornell, C., & Larcker, D. F. (1981). Evaluating Structural Equation Models with Unobservable Variables and Measurement Error. *Journal of Marketing Research, 18*(1), 39-50.

Fornell, C., Lorange, P., & Roos, J. (1990). The Cooperative Venture Formation Process: A Latent Variable Structural Modeling Approach. *Management Science, 36*(10), 1246-1255.

Fowler Jr, F. J. (2009). *Survey Research Methods*. Thousand Oaks, CA: Sage Publications, Inc.

Francis, C., & Feld, M. (2011). *Cash Jobs, Crime Drive Black Economy*. Retrieved from http://www.stuff.co.nz/business/money/6065508/Cash-jobs-crime-drive-black-economy.

Franzoni, L. A. (2000). Tax Evasion and Tax Compliance. In B. Bouckaert & G. De Geest (Eds.), *Encyclopedia of Law and Economics* (Vol. 4, pp. 51-94). Cheltenham: Edward Elgar.

Frey, B. S. (1992). Tertium Datur: Pricing Regulating and Intrinsic Motivation. *Kyklos, 45*(2), 161-184.

Frey, B. S. (1997). *Not Just for the Money: An Economic Theory of Personal Motivation*. Cheltenham: Edward Elgar.

Frey, B. S. (2003). Deterrence and Tax Morale in the European Union. *European Review, 11*(3), 385-406.

Frey, B. S., & Feld, L. P. (2002). *Deterrence and Morale in Taxation: An Empirical Analysis.* (Working Paper No.760). Munich: CESifo.

Frey, B. S., & Torgler, B. (2007). Tax Morale and Conditional Cooperation. *Journal of Comparative Economics, 35*, 136-159.

Frey, L. R., & Torgler, B. (2002). Entwicklung und Stand der Steuermoralforschung. *WiSt, 3*, 130-135.

Friedland, N. (1982). A Note on Tax Evasion as a Function of the Quality of Information about the Magnitude and Credibility of Threatened Fines: Some Preliminary Research. *Journal of Applied Social Psychology, 12*(1), 54-59.

Friedland, N., Maital, S., & Rutenberg, A. (1978). A Simulation Study of Income Tax Evasion. *Journal of Public Economics, 10*(1), 107-116.

Galesic, M., & Bosnjak, M. (2009). Effects of Questionnaire Length on Participation and Indicators of Response Quality in a Web Survey. *Public Opinion Quarterly, 73*(2), 349-360.

Garcia, K., & Mann, T. (2003). From 'I Wish' to 'I Will': Social-Cognitive Predictors of Behavioural Intentions. *Journal of Health Psychology, 8*(3), 347-360.

Gaur, A., & Gaur, S. (2006). *Statistical Methods for Practice and Research: A Guide to Data Analysis Using SPSS*. Thousand Oaks, CA: Sage Publications, Inc.

Geerken, M., & Grove, W. (1975). Deterrence: Some Theoretical Considerations. *Law and Society Revenue, 9*(3), 498-513.

Gefen, D., & Straub, D. W. (2005). A Practical Guide to Factorial Validity using PLS-Graph: Tutorial and Annotated Example. *Communications of the Association for Information Systems, 16*(2), 91-109.

Gefen, D., Straub, D. W., & Boudreau, M. (2000). Structural Equation Modeling and Regression: Guidelines for Research Practice. *Communications of the Association for Information Systems, 4*(7), 1-78.

Geisser, S. (1975). The Predictive Sample Reuse Method with Applications. *Journal of the American Statistical Association, 70*(350), 320-328.

Gerbing, D. W., & Anderson, J. C. (1988). An Updated Paradigm for Scale Development Incorporating Unidimensionality and its Assessment. *Journal of Marketing Research, 25*(2), 186-192.

Gibbs, J. (1986). Deterrence Theory and Research. In G. Melton (Ed.), *The Law as a Behavioral Instrument* (pp. 87-130). Lincoln, Neb: University of Nebraska Press.

Gibbs, J. P. (1968). Crime, Punishment, and Deterrence. *Southwestern Social Science Quarterly, 48*(4), 515-530.

Gibbs, J. P. (1977). Social Control, Deterrence, and Perspectives on Social Order. *Social Forces, 56*, 408-423.

Gibbs, J. P. (1979). Assessing the Deterrence Doctrine: A Challenge to the Social Sciences. *American Behavioral Scientist, 22*(6), 653-677.

Gibbs, T. N. (1936). *An Unequal Tax: The Budget Proposal for Graduated Land Tax*. Christchurch Land Tax Committee. Christchurch.

Giles, M., McClenahan, C., Cairns, E., & Mallet, J. (2004). An Application of the Theory of Planned Behaviour to Blood Donation: The Importance of Self-Efficacy. *Health Education Research, 19*(4), 380-391.

Goddard, K. E., Broder, G., & Wenar, C. (1961). Reliability of Pediatric Histories: A Preliminary Study. *Pediatrics, 28*, 1011-1018.

Godin, G., & Kok, G. (1996). The Theory of Planned Behavior: A Review of Its Applications to Health-Related Behaviors. *American Journal of Health Promotion, 11*(2), 87-98.

Gotz, O., Liehr-Gobbers, K., & Krafft, M. (2010). Evaluation of Structural Equation Models using the Partial Least Squares (PLS) Approach. In V. Esposito Vinzi, W. W. Chin, J. Henseler & H. Wang (Eds.), *Handbook of Partial Least Squares: Concepts, Methods and Applications* (pp. 691-711). Heidelberg: Springer.

Graetz, M. J., & Wilde, L. L. (1985). The Economics of Tax Compliance: Facts and Fantasy. *National Tax Journal, 38*, 355-363.

Grasmick, H. G., & Appleton, L. (1977). Legal Punishment and Social Stigma: A Comparison of Two Deterrence Models. *Social Science Quarterly, 58*, 15-28.

Grasmick, H. G., & Bryjak, G. J. (1980). The Deterrent Effect of Perceived Severity of Punishment. *Social Forces, 59*(2), 471-491.

Grasmick, H. G., & Bursik Jr, R. J. (1990). Conscience, Significant Others, and Rational Choice: Extending the Deterrence Model. *Law & Society Review, 24*(3), 837-861.

Grasmick, H. G., & Green, D. E. (1980). Legal Punishment, Social Disapproval and Internalization as Inhibitors of Illegal Behavior. *The Journal of Criminal Law and Criminology, 71*(3), 325-335.

Grasmick, H. G., & Scott, W. J. (1982). Tax Evasion and Mechanisms of Social Control: A Comparison with Grand and Petty Theft. *Journal of Economic Psychology, 2*(3), 213-230.

Greenlaw, C., & Brown-Welty, S. (2009). A Comparison of Web-Based and Paper-Based Survey Methods Testing Assumptions of Survey Mode and Response Cost. *Evaluation Review, 33*(5), 464-480.

Groenland, E. A. G., & van Veldhoven, G. M. (1983). Tax Evasion Behaviour: A Psychological Framework. *Journal of Economic Psychology, 3*, 129-144.

Gupta, R. (2006). Perceptions of Tax Evasion as a Crime: Evidence from New Zealand. *New Zealand Journal of Taxation Law and Policy, 12*(3), 199-222.

Gupta, R. (2007). How Perceptions of Tax Evasion as a Crime and Other Offences Mirror the Penalties. *New Zealand Journal of Taxation Law and Policy, 13*(4), 607-620.

Guyton, J. L., O'Hare, J. F., Stavrianos, M. P., & Toder, E. J. (2003). Estimating the Compliance Cost of the U.S. Individual Income Tax. *National Tax Journal, 56*(3), 673-688.

Haenlein, M., & Kaplan, A. M. (2004). A Beginners Guide to Partial Least Squares Analysis. *Understanding Statistics, 3*(4), 283-297.

Hair, J. F., Black, W. C., Babin, B. J., Anderson, R. E., & Tatham, R. L. (2006). *Multivariate Data Analysis (6th ed.)*. Upper Saddle River, NJ: Prentice Hall.

Hanlon, D. (2001). *Vision and Support in New Venture Start-Ups. Frontiers for Entrepreneurship Research*. Retrieved from http://fusionmx.babson.edu/entrep/fer/babson2001/XI/XIB/XIB/xi-b.htm.

Hanno, D. M., & Violette, G. R. (1996). An Analysis of Moral and Social Influences on Taxpayer Behaviour. *Behavioral Research in Accounting, 8*, 57-75.

Hanushek, E. A., & Jackson, J. E. (1977). *Statistical Methods for Social Scientists*. Orlando FL: Academic.

Hartner, M., Rechberger, S., Kirchler, E., & Schabmann, A. (2008). Procedural Fairness and Tax Compliance. *Economic Analysis and Policy, 38*(1), 137-152.

Hasseldine, D. J., Hite, P., James, S., & Toumi, M. (2007). Persuasive Communications: Tax Compliance Enforcement Strategies for Sole Proprietors. *Contemporary Accounting Research, 24*(1), 171-194.

Hasseldine, D. J., & Kaplan, S. E. (1992). The Effect of Different Sanction Communications on Hypothetical Taxpayer Compliance: Policy Implications from New Zealand. *Public Finance, 47*(1), 45-60.

Hasseldine, D. J., Kaplan, S. E., & Fuller, L. R. (1994). Characteristics of New Zealand Tax Evaders: A Note. *Accounting and Finance, 34*(2), 79-93.

Hausenblas, H. A., Carron, A. V., & Mack, D., E. (1997). Application of the Theories of Reasoned Action and Planned Behavior to Exercise Behavior: A Meta-Analysis. *Journal of Sport & Exercise Psychology, 19*(1), 36-51.

Hessing, D. J., Elffers, H., & Weigel, R. H. (1988). Exploring the Limits of Self-Reports and Reasoned Action: An Investigation of the Psychology of Tax Evasion. *Journal of Personality and Social Psychology, 54*(3), 405-413.

Hessing, D. J., Kinsey, K. A., Elffers, H., & Weigel, R. H. (1988). Tax Evasion Research: Measurement Strategies and Theoretical Models. In W. F. van Raiij, G. M. van Veldhoven & K. E. Warneryd (Eds.), *Handbook of Economic Psychology* (pp. 517-536). New York: Kluwer Academic/Plenum Publishers.

Hinton, P. R., McMurray, C., & Cozens, B. (2004). *SPSS Explained*. East Sussex, London: Routledge.

Hirst, E., & Goeltz, R. (1984). Testing for Non-Response Bias: Evaluation of Utility Energy Conservation. *Evaluation Review, 8*(2), 269-278.

Hite, P. (1988). An Examination of the Impact of Subject Selection on Hypothetical and Self-Reported Taxpayer Compliance. *Journal of Economic Psychology, 9*, 445-466.

Hite, P. A. (1997). Identifying and Mitigating Taxpayer Non-compliance. *Australian Tax Forum, 13*(2), 155-180.

Holdershaw, J., Gendall, P., & Wright, M. (2011). Predicting Blood Donation Behaviour: Further Application of the Theory of Planned Behaviour. *Journal of Social Marketing, 1*(2), 120-132.

Howe, E. S., & Brandau, C. J. (1988). Additive Effects of Certainty, Severity, and Celerity of Punishment on Judgments of Crime Deterrence Scale Value. *Journal of Applied Social Psychology, 18*(9), 796-812.

Hulland, J. (1999). Use of Partial Least Squares (PLS) in Strategic Management Research: A Review of Four Recent Studies. *Strategic Management Journal, 20*(2), 195-204.

Inland Revenue. (1994). *Taxpayer Compliance, Standards and Penalties. A Government Discussion Document*. Wellington.

Inland Revenue. (1995). *Taxpayer Compliance, Standards and Penalties 2: Detailed Proposals and Draft Legislation. A Government Discussion Document*. Wellington.

Inland Revenue. (1996). *Tax Information Bulletin*. Wellington. *8*(7), 3-50.

Inland Revenue. (2001). *Taxpayer Compliance, Standards and Penalties. A Review. A Government Discussion Document*. Wellington.

Internal Revenue Service. (1970). *Factors Affecting Taxpayer Compliance with Federal Tax Laws. Planning and Analysis Division Staff Paper*. Washington, DC.

Jackson, B. R., & Jones, S. M. (1985). Salience of Tax Evasion Penalties versus Detection Risk. *Journal of the American Taxation Association, 6*(2), 7-17.

Jackson, B. R., & Milliron, V. C. (1986). Tax Compliance Research: Findings, Problems and Prospects. *Journal of Accounting Literature, 5*, 135-166.

James, S., & Alley, C. (1999). Tax Compliance, Self-Assessment, and Tax Administration in New Zealand - Is a Carrot or the Stick More Appropriate to Encourage Compliance. *New Zealand Journal of Taxation Law and Policy, 5*(1), 3-14.

James, S., & Alley, C. (2002). Tax Compliance, Self-Assessment and Tax Administration. *Journal of Finance and Management in Public Services, 2*(2), 27-42.

Jarvis, C. B., MacKenzie, S. B., & Podsakaff, P. M. (2003). A Critical Review of Construct Indicators and Measurement Model Misspecification in Marketing and Consumer Research. *Journal of Consumer Research, 30*, 199-218.

Johansson, J., & Yip, G. S. (1994). Exploiting Globalisation Potential: U.S. and Japanese Strategies. *Strategic Management Journal, 15*, 579-601.

Johnson, P. O. (1959). Development of the Sample Survey as a Scientific Methodology. *The Journal of Experimental Education, 27*(3), 167-176.

Jones, E., Sundaram, S., & Chin, W. (2002). Factors Leading to Sales Force Automation Use: A Longitudinal Analysis. *Journal of Personal Selling & Sales Management, 22*(3), 145-156.

Joreskog, K. G. (1973). A General Method for Estimating a Linear Structural Equation System. In A. S. Goldberger & O. D. Duncan (Eds.), *Structural Equation Models in the Social Sciences* (pp. 85-122). New York: Academic Press.

Jose, M. L., & Moore, C. K. (2002). The Development of Taxation in the Bible. *Accounting Historians Journal, 25*(2), 63-79.

Kagan, R. A. (1989). On the Visibility of Income Tax Law Violations. In J. A. Roth & J. T. Scholz (Eds.), *Taxpayer Compliance: Social Science Perspectives* (pp. 76-125). Philadelphia: University of Pennsylvania Press.

Kahan, D. M. (2006). What's Really Wrong with Shaming Sanctions. *Texas Law Review, 87*(7), 2075-2095.

Kaplan, S., Newberry, K., & Reckers, P. (1997). The Effect of Moral Reasoning and Educational Communications on Tax Evasion Intentions. *Journal of American Taxation Association, 19*(2), 38-54.

Kaplan, S. E., & Reckers, P. M. J. (1985). A Study of Tax Evasion Judgements. *National Tax Journal, 38*(1), 97-102.

Kaplan, S. E., Reckers, P. M. J., West, S. G., & Boyd, J. C. (1988). An Examination of Tax Reporting Recommendations of Professional Tax Preparers. *Journal of Economic Psychology, 9*, 427-443.

Kaplowitz, M. D., Hadlock, T. D., & Levine, R. (2004). A Comparison of Web and Mail Survey Response Rates. *Public Opinion Quarterly, 68*(1), 94-101.

Karlinsky, S., Burton, H., & Blanthorne, C. (2004). Perceptions of Tax Evasion as a Crime. *e-Journal of Tax Research, 2*(2), 226-240.

Kay, J. A., & King, M. A. (1990). *The British Tax System*. New York: Oxford University Press.

Kelley, H. H. (1972). Causal Schemata and the Attribution Process. In E. E. Jones (Ed.), *Attribution: Perceiving the Causes of Behavior* (pp. 151-174). Morristown, NJ: General Learning Press.

Kiernan, N. E., Kiernan, M., Oyler, M. A., & Gilles, C. (2005). Is a Web Survey As Effective As a Mail Survey? A Field Experiment Among Computer Users. *American Journal of Evaluation, 26*(2), 245-252.

Kinsey, K. A. (1984). *Survey Data on Tax Compliance: A Compendium and Review*. Chicago: American Bar Foundation.

Kinsey, K. A. (1986). Theories and Models of Tax Cheating. *Criminal Justice Abstracts, 18*, 403-425.

Kinsey, K. A. (1992). Deterrence and Alienation Effects of IRS Enforcement: An Analysis of Survey Data. In J. Slemrod (Ed.), *Why People Pay Taxes: Tax Compliance and Enforcement* (pp. 259-289). Ann Arbor: University of Michigan Press.

Kirchler, E. (1998). Differential Representations of Taxes: Analysis of Free Associations and Judgments of Five Employment Groups. *Journal of Socio-Economics, 27*(1), 117-131.

Kirchler, E. (1999). Reactance to Taxation: Employers' Attitudes Towards Taxes. *Journal of Socio-Economics, 28*(2), 131-138.

Kirchler, E. (2007). *The Economic Psychology of Tax Behavior*. Cambridge, UK: Cambridge University Press.

Kirchler, E., Muehlbacher, S., Hoelzl, E., & Webley, P. (2009). Effort and Aspirations in Tax Evasion: Experimental Evidence. *Applied Psychology, 58*(3), 488-507.

Kirchler, E., Niemirowski, P., & Wearing, A. (2006). Shared Subjective Views, Intent to Cooperate and Tax Compliance: Similarities Between Australian Taxpayers and Tax Officers. *Journal of Economic Psychology, 27*(4), 502-517.

Klepper, S., & Nagin, D. (1989). Tax Compliance and Perceptions of the Risks of Detection and Criminal Prosecution. *Criminology, 23*, 209-240.

Kohlberg, L. (1969). Stage and Sequence: The Cognitive-Developmental Approach to Socialization. *Handbook of Socialization Theory and Research, 347*, 347-480.

Kornhauser, M. (2007). A Tax Morale Approach to Compliance: Recommendations for the IRS. *Florida Tax Review, 8*(6), 601-634.

Kristensen, K., & Eskildsen, J. (2010). Design of PLS-Based Satisfaction Problem: Bootstrap and Imputation Techniques. In V. Esposito Vinzi, W. W. Chin, J. Henseler & H. Wang (Eds.), *Handbook of Partial Least Squares: Concepts, Methods and Applications* (pp. 247-277). Heidelberg: Springer.

Lacy, W. B. (1981). The Influence of Attitude and Current Friends on Drug Use Intentions. *The Journal of Social Psychology, 113*, 65-76.

Lazarus, R., & Folkman, S. (1984). *Stress, Appraisal, and Coping*. New York: Springer.

Lempert, R. (1982). Organizing for Deterrence: Lessons from a Study of Child Support. *Law & Society Review, 16*(4), 513-568.

Leong, C. Y. (1980). *A Study of Non-Response Bias in Mail Surveys*. Palmerston North: Department of Marketing, Massey University.

Leventhal, G. S. (1980). What Should Be Done with Equity Theory? New Approach to the Study of Fairness in Social Relationships. In K. J. Gregen, M. S. Greenberg & R. H. Willis (Eds.), *Social Exchange: Advances in Theory Research* (pp. 27-55). New York: Plenuim Press.

Lewis, A. (1979). An Empirical Assessment of Tax Mentality. *Public Finance, 2*, 245-257.

Lewis, A. (1982). *The Psychology of Taxation*. Oxford, UK: Martin Robertson Publishers.

Lewis, B. R., & Ford, R. N. (1987). *Basic Statistic Using SAS*. St. Paul, MN: West Publishing Company.

Lewis, H. B. (1971). *Shame and Guilt in Neurosis*. New York: International University Press.

Lind, E. A., Kulik, C. A., Ambrose, M., & de Vera Park, M. V. (1993). Individual and Corporate Dispute Resolution: Using Procedural Fairness as a Decision Heuristic. *Administrative Science Quarterly, 38*, 224-251.

Lind, E. A., & Tyler, T. R. (1988). *The Social Psychology of Procedural Justice*. New York: Plenum Press.

Little, R. J., & Rubin, D. B. (2002). *Statistical Analysis with Missing Data*. New York: Wiley.

Lohmoller, J. B. (1989). *Latent Variables Path Modeling with Partial Least Squares*. Heidelberg: Physica.

Long, S. B., & Swingen, J. A. (1991). Taxpayer Compliance: Setting New Agendas for Research. *Law and Society Review, 25*(3), 637-684.

Loo, E. C., McKerchar, M., & Hansford, A. (2008). *Tax Compliance Behaviour: Findings Derived From A Mixed Method Design.* Paper presented at the 8th International Tax Administration Conference, Sydney.

Lu, C-T., Huang, S-Y., & Lo, P-Y. (2010). An Empirical Study of On-line Tax Filing Acceptance Model: Integrating TAM and TPB. *African Journal of Business Management, 4*(5), 800-810.

Lutz, S. (2011). The Theory of Planned Behaviour and the Impact of Past Behaviour. *The International Business & Economics Research Journal, 10*(1), 91-110.

MacCullum, R. C., & Browne, M. W. (1993). The Use of Causal Indicators in Covariance Structure Models: Some Practical Issues. *Psychological Bulletin, 114*, 533-541.

Maciejovsky, B., Kirchler, E., & Schwarzenberger, H. (2001). *Mental Accounting and the Impact of Tax Penalty and Audit Frequency on the Declaration of Income: An Experimental Analysis.* Retrieved from http://edoc.hu-berlin.de/series/sfb-373-papers/ 2001-16/PDF/16.pdf.

Madden, T. J., Ellen, P. S., & Ajzen, I. (1992). A Comparison of the Theory of Planned Behavior and the Theory of Reasoned Action. *Personality and Social Psychology Bulletin, 18*(1), 3-9.

Mancer, C. J. (1988). *An Introduction to Taxation in New Zealand*. Wellington: Butterworth & Company.

Manfredo, M. J., & Shelby, B. (1987). The Effect of Using Self-Report Measures in Tests of Attitude-Behavior Relationships. *The Journal of Social Psychology, 128*(6), 731-743.

Manstead, A. S. R., & van Eeklen, S. A. M. (1998). Distinguishing Between Perceived Behavioral Control and Self-Efficacy in the Domain of Academic Achievement Intentions and Behaviors. *Applied Social Psychology, 28*(15), 1375-1392.

Marcoux, B. C., & Shope, J. T. (1997). Application of the Theory of Planned Behavior to Adolescent Use and Misuse of Alcohol. *Health Education Research, 12*(3), 323-331.

Marsh, H. W., & Hocevar, D. (1988). A New, More Powerful Approach to Multitrait-Multimethod Analyses: Application of Second Order Confirmatory Factor Analysis. *Journal of Applied Psychology, 73*(2), 107-117.

Martin, R. J., Usdan, S., Nelson, S., Umstattd, M. R., LaPlante, D., Perko, M., & Shaffer, H. (2010). Using the Theory of Planned Behavior to Predict Gambling Behavior. *Psychology of Addictive Behaviors, 24*(1), 89-97.

Mason, R., & Calvin, L. D. (1978). A Study of Admitted Tax Evasion. *Law and Society Review, 13*, 73-89.

Mason, R., & Calvin, L. D. (1984). Public Confidence and Admitted Tax Evasion. *National Tax Journal, 37*(4), 489-496.

Mathieson, K. (1991). Predicting User Intentions: Comparing the Technology Acceptance Model with the Theory of Planned Behavior. *Information System Research, 2*, 173-191.

Mathieson, K., Peacock, E., & Chin, W. W. (2001). Extending the Technology Acceptance Model: The Influence of Perceived User Resources. *Data Base for Advances in Information Systems, 32*(3), 86-112.

Mathieu, L., Price, C. W., & Antwi, F. (2010). The Distribution of UK Personal Income Tax Compliance Costs. *Applied Economics, 42*(3), 351-368.

Mavis, B. E., & Brocato, J. J. (1998). Postal Surveys versus Electronic Mail Surveys. The Tortoise and the Hare Revisited. *Evaluation and the Health Professions, 21*(3), 395–408.

Mayhew, M. J., Hubbard, S. M., Cynthia, J. F., Harding, T. S., & Carpenter, D. D. (2009). Using Structural Equation Modeling to Validate the Theory of Planned Behavior as a Model for Predicting Student Cheating. *The Review of Higher Education, 32*(4), 441-468.

McCabe, S. E. (2004). Comparison of Web and Mail Surveys in Collecting Illicit Drug Use Data: A Randomized Experiment. *Journal of Drug Education, 34*, 61-74.

McGraw, K. M. (1989). *The Influence of Fairness and Outcomes on Evaluations of Tax Experience*. Paper presented at the Meeting of the Law and Society Association, Madison, Wisconsin.

McGraw, K. M., & Scholz, J. T. (1991). Appeals to Civic Virtue versus Attention to Self-Interest: Effects on Tax Compliance. *Law & Society Review, 25*(3), 471-498.

McIntosh, R. K., & Veal, J. A. (2001). Tax Evasion and New Zealanders' Attitudes Towards It. *New Zealand Journal of Taxation Law and Policy, 7*(2), 80-110.

McKerchar, M. (2001). Why Do Taxpayers Comply? Past Lessons and Future Directions in Developing a Model of Compliance Behaviour. In M. Walpole & C. Evans (Eds.), *Tax Administration in the 21st Century.* St Leonards, NSW: Prospect Media.

McKerchar, M. (2003a). *The Impact of Complexity Upon Tax Compliance: A Study of Australian Personal Taxpayers*. Australian Tax Research Foundation, Research Study No. 39, Sydney.

McKerchar, M. (2003b). *The Effects of Complexity on Unintentional Noncompliance for Personal Taxpayers in Australia*. Paper presented at the 5th International Conference on Tax Administration: Current Issues and Future Developments, Sydney.

McKerchar, M. (2005). The Impact of Tax Complexity on Practitioners in Australia. *Australian Tax Forum 20*(4), 529-554.

McKerchar, M. (2010). *Design and Conduct of Research in Tax, Law and Accounting*. Sydney: Thomson Reuters/Lawbook Co.

McLeod, R., Patterson, D., Jones, S. M., Chatterjee, S., & Sieper, E. (2001). *Tax Review 2001*. Retrieved from http://www.treasury.govt.nz/publications/reviews-consultation /taxreview2001.

McLisky, I. B. (2011). *The Compliance and Penalty Regime: Its Role as a Compliance Instrument in Combating the Criminalisation of Tax Fraud in New Zealand.* Unpublished Masters Thesis, Massey University, New Zealand.

Mendes, S. M. (2004). Certainty, Severity, and Their Relative Deterrent Effects: Questioning the Implications of the Role of Risk in Criminal Deterrence Policy. *The Policy Studies Journal, 32*(1), 59-74.

Mendes, S. M., & McDonald, M. D. (2001). Putting Severity of Punishment Back in the Deterrence Package. *Policy Studies Journal, 29*(4), 588-610.

Merton, R. K. (1968). *Social Theory and Social Structure.* New York: Free Press.

Messick, D. M., & Cook, K. (1983). *Equity Theory: Psychological and Sociological Perspectives*. Connecticut: Praeger Publishers.

Meyers, L. S., Gamst, G., & Guarino, A. J. (2006). *Applied Multivariate Research: Design and Interpretation*. Thousand Oaks, California: Sage Publications.

Michaelidou, N., & Dibb, S. (2006). Using Email Questionnaires for Research: Good Practice in Tackling Non-Response. *Journal of Targeting, Measurement and Analysis for Marketing, 14*(4), 289-296.

Miller, L. E., & Smith, K. L. (1983). Handling Non-Response Issues. *Journal of Extension, 21*(5), 45-50.

Milliron, V. C., & Toy, D. R. (1988). Tax Compliance: An Investigation of Key Features. *The Journal of the American Taxation Association, 9*(2), 84-104.

Murphy, K. (2003a). An Examination of Taxpayers' Attitudes Towards the Australian Tax System: Findings from a Survey of Tax Scheme Investors. *Australian Tax Forum, 18*(2), 209-242.

Murphy, K. (2003b). Procedural Justice and Tax Compliance. *Australian Journal of Social Science Issues, 38*, 379-408.

Murphy, K. (2003c). *Preventing Widespread Resistance to Decisions: The Role of Trust in Regulating Taxpayers*. Paper presented at the 28th Annual IAREP Colloquium, Christchurch New Zealand.

Murphy, K. (2004a). Aggressive Tax Planning: Differentiating Those Playing the Game from Those Who Don't. *Journal of Economic Psychology, 25*(3), 307-329.

Murphy, K. (2004b). The Role of Trust in Nurturing Compliance: A Study of Accused Tax Avoiders. *Law and Human Behavior, 28*(2), 187-209.

Murphy, K. (2005). Regulating More Effectively: The Relationship Between Procedural Justice, Legitimacy, and Tax Non-Compliance. *Journal of Law and Society, 32*, 562-589.

Murphy, K. (2008). Enforcing Tax Compliance: To Punish or Persuade? *Economic Analysis & Policy, 38*(1), 113-135.

Murphy, K. (2010). *Tax Avoidance, Tax Compliance and Tax Cheats*. Retrieved from http://www.taxresearch.org.uk/Blog/2010/12/20/tax-avoidance-tax-compliance-and-tax-cheats/.

Neuman, W. (2006). *Social Research Methods: Qualitative and Quantitative Approaches*. Boston, MA: Pearson Education.

New Zealand Taxation Review Committee. (1967). *Taxation in New Zealand: Report of the Taxation Review Committee*. Wellington: Government Printer.

Niemirowski, P., Baldwin, S., & Wearing, A. (2001). Thirty Years of Tax Compliance Research: Of What Use is it to the ATO. In M. Walpole & C. Evans (Eds.), *Tax Administration in the 21st Century* (pp. 199-214). St Leonards: Prospect Media.

Nussim, J., & Tabbach, A. (2009). Deterrence or Avoidance. *International Review of Law and Economics, 29*, 314-323.

OECD. (2004). *Compliance Risk Management: Managing and Improving Tax Compliance. Centre for Tax Policy and Administration, Forum on Tax Administration Compliance Sub-group*. Retrieved from http://www.oecd.org/dataoecd/44/19/33818656 .pdf.

Oliver, W. H., & Williams, B. R. (1992). *The Oxford History of New Zealand*. Auckland, NZ: Oxford University Press.

Orviska, M., & Hudson, J. (2002). Tax Evasion, Civic Duty and the Law Abiding Citizen. *European Journal of Political Economy, 19*(1), 83-102.

Oxley, P. (1993). Women and Paying Tax. In C. Scott (Ed.), *Women and Taxation* (pp. 31-52). Wellington: Wellington Institute of Policy Studies.

Pallant, J. (2011). *SPSS Survival Manual: A Step by Step Guide to Data Analysis Using SPSS Program*. Crows Nest, NSW: Allen & Unwin.

Park, C. G., & Hyun, J. K. (2003). Examining the Determinants of Tax Compliance by Experimental Data: A Case of Korea. *Journal of Policy Modeling, 25*(8), 673-684.

Parker, D., Manstead, A. S., & Stradling, S. G. (1995). Extending the Theory of Planned Behaviour: The Role of Personal Norm. *British Journal of Social Psychology, 34*(2), 127-138.

Parker, D., Manstead, A. S. R., Stradling, S. G., Reason, J. T., & Baxter, J. S. (1992). Intention to Commit Driving Violations: An Application of the Theory of Planned Behavior. *Journal of Applied Psychology, 77*(1), 94-101.

Parsons, T. (1951). *The Social System*. New York: MacMillan.

Petter, S., Straub, D., & Rai, A. (2007). Specifying Formative Constructs in Information Systems Research. *Management Information Systems Quarterly, 31*(4), 623-656.

Pommerehne, W., Hart, A., & Frey, B. S. (1994). Tax Morale: Tax Evasion, and the Choice of Tax Policy Instruments in Different Political Systems. *Public Finance, 49*, 52-69.

Pope, J., & McKerchar, M. (2011). Understanding Tax Morale and its Effects on Individual Taxpayer Compliance. *British Tax Review, 5*, 587-601.

Porcano, T. M. (1988). Correlates of Tax Evasion. *Journal of Economic Psychology, 9*(1), 47-67.

Porter, S. R., & Whitcomb, M. E. (2007). Mixed-Mode Contacts in Web Surveys: Paper is Not Necessarily Better. *Public Opinion Quarterly, 71*(4), 635-648.

Reckers, P., Sanders, D., & Roark, S. (1994). The Influence of Ethical Attitudes of Taxpayer Compliance. *National Tax Journal, 47*(4), 825-836.

Reeves, W. P. (1911). Land Taxes in Australasia. *The Economic Journal, 21*(84), 513-526.

Richards, P., & Tittle, C. (1981). Gender and Perceived Chances of Arrest. *Social Forces, 59*(4), 1182-1199.

Richardson, G. (2006). Determinants of Tax Evasion: A Cross Country Investigation. *Journal of International Accounting, Auditing and Taxation, 15*(2), 150-169.

Richardson, M. A., & Sawyer, A. (2001). A Taxonomy of the Tax Compliance Literature: Further Findings, Problems and Prospects. *Australian Tax Forum, 16*(2), 137-320.

Rigdon, E. E. (1998). The Equal Correlation Baseline Model for Comparative Fit Assessment in Structural Equation Modeling. *Structural Equation Modeling: A Multidisciplinary Journal, 5*(1), 63-77.

Rise, J., Kovac, V., Kraft, P., & Moan, I. S. (2008). Predicting the Intention to Quit Smoking and Quitting Behaviour: Extending the Theory of Planned Behaviour. *British Journal of Health Psychology, 13*(2), 291–310.

Ritsema, C. M., Thomas, D. W., & Ferrier, G. D. (2003). *Economic and Behavioral Determinants of Tax Compliance: Evidence From the 1997 Arkansas Tax Penalty Amnesty Program*. Paper presented at the IRS Research Conference, Washington, D.C.

Robben, H. S. J., Hessing, D. J., & Elffers, H. (1990). Legal Controls and Type of Employment in Tax Evasion Behavior. In S. E. G. Lea, P. Webley & B. M. Young (Eds.),

Applied Economic Psychology in the 1990s (pp. 512-552). Exeter: Washington Singer Press.

Roberts, M. L. (1994). An Experimental Approach to Changing Taxpayers: An Experimental Approach to Changing Taxpayers' Attitudes Towards Fairness and Compliance via Television. *Journal of the American Taxation Association, 16*(1), 67-86.

Rokeach, M. (1973). *The Nature of Human Values*. New York: Free Press.

Roth, J. A., Scholz, J. T., & Witte, A. D. (1989). *Taxpayer Compliance: An Agenda for Research*. Philadelphia: University of Pennsylvania Press.

Ruiz, D. M., Dwayne, D. G., Washburn, J. H., & Carrion, G. C. (2010). Reframing Customer Value in a Service-Based Paradigm: An Evaluation of a Formative Measure in a Multi-Industry, Cross-Cultural Context. In V. Esposito Vinzi, W. W. Chin, J. Henseler & H. Wang (Eds.), *Handbook of Partial Least Squares: Concepts, Methods and Applications* (pp. 535-566). Heidelberg: Springer.

Russell, J., & Roberts, C. (2001). *Angles on Psychological Research*. Cheltenham. UK: Bath Press.

Rutter, D. R., & Bunce, D. J. (1989). The Theory of Reasoned Action of Fishbein and Ajzen: A Test of Towriss's Amended Procedure for Measuring Beliefs. *British Journal of Social Psychology, 28*, 39-46.

Saad, N. (2009). Fairness Perceptions and Compliance Behaviour: The Case of Salaried Taxpayers in Malaysia after Implementation of the Self-Assessment System. *e-Journal of Tax Research, 8*(1), 32-63.

Saad, N. (2011). Fairness Perceptions and Compliance Behaviour: The New Zealand Evidence. *New Zealand Journal of Taxation Law and Policy, 17*(1), 33-66.

Sabine, B. E. V. (2002). Life Without Income Tax. In S. James (Ed.), *Taxation: Critical Perspectives on the World Economy* (pp. 35-48). London: Routledge.

Sandford, C. (1995). *Compliance Costs: Measurement and Policy*. Bath: Fiscal Publication.

Sandmo, A. (2005). The Theory of Tax Evasion: A Retrospective View. *National Tax Journal, 54*(4), 643-663.

Santosa, P., Wei, K., & Chan, H. (2005). User Involvement and User Satisfaction with Information-Seeking Activity. *European Journal of Information Systems, 14*(4), 361-370.

Sawyer, J. A. (1996). Blurring the Distinction Between Avoidance and Evasion –The Abusive Tax Position, *British Tax Review, 5*, 483-504.

Schaefer, D. R., & Dillman, D. A. (1998). Development of a Standard E-Mail Methodology: Results of an Experiment. *Public Opinion Quarterly, 62*(3), 378-397.

Schafer, J. L., & Graham, J. W. (2002). Missing Data: Our View of the State of the Art. *Psychological Methods, 7*(2), 147-177.

Schauer, P. C., & Bajor, L. (2007). The Impact Detection Risk Has on Tax Compliance: An Alternative View. *Academy of Accounting and Financial Studies Journal, 11*(2), 15-33.

Schisler, D. L. (1995). Equity, Aggressiveness, Consensus: A Comparison of Taxpayers and Tax Preparers. *Accounting Horizons, 9*(4), 76-87.

Schmölders, G. (1959). Fiscal Psychology: A New Branch of Public Finance. *National Tax Journal, 12*(4), 340-345.

Schmölders, G. (1970). Survey Research in Public Finance: A Behavioral Approach to Fiscal Theory. *Public Finance, 25*(2), 442-452.

Schneider, F. (2011). *Handbook on the Shadow Economy*. Cheltenham, UK: Edward Elgar Publishing Limited.

Scholz, J. T., & Lubell, M. (1998). Adaptive Political Attitudes: Duty, Trust, and Fear as Monitors of Tax Policy. *American Journal of Political Science, 42*(3), 903-920.

Scholz, J. T., & Pinney, N. (1995). Duty, Fear, and Tax Compliance: The Heuristic Basis of Citizenship Behavior. *American Journal of Political Science, 39*(2), 490-512.

Schwartz, R. D., & Orleans, S. (1967). On Legal Sanctions. *The University of Chicago Law Review, 34*(2), 274-300.

Schwarz, A., & Schwarz, C. (2007). The Role of Latent Beliefs and Group Cohesion in Predicting Group Decision Support System Success. *Small Group Research, 38*(1), 195-228.

Sellin, N., & Keeves, J. P. (1994). Path Analysis with Latent Variables. In T. Husen & T. N. Postlethwaite (Eds.), *The International Encyclopedia of Education* (pp. 4352–4359). Oxford: Pergamon Press.

Sheeran, P., Conner, M., & Norman, P. (2001). Can The Theory of Planned Behavior Explain Patterns of Health Behaviour Change? *Health Psychology, 20*(1), 12-19.

Sheeran, P., & Orbell, S. (1999). Augmenting the Theory of Planned Behaviour: Roles for Anticipated Regret and Descriptive Norms. *Journal of Applied Social Psychology, 23*, 2107-2142.

Sheffrin, S. M., & Triest, R. K. (1992). Can Brute Deterrence Backfire? Perceptions and Attitudes in Taxpayer Compliance. In J. Slemrod (Ed.), *Why People Pay Taxes: Tax Compliance and Enforcement* (pp. 193-218). Ann Arbor: University of Michigan Press.

Sheik, K., & Marringly, S. (1981). Investigating Non-Response Bias in Mail Surveys. *Journal of Epidemiology and Community Health, 35*(4), 293-296.

Sheppard, B. H., Hartwick, J., & Warshaw, P. R. (1988). The Theory of Reasoned Action: A Meta-Analysis of Past Research with Recommendations for Modifications and Future Research. *Journal of Consumer Research, 15*(3), 325-343.

Sheppard, B. H., Lewicki, R. J., & Minton, J. W. (1992). *Organizational Justice*. Lexington, Mass: Lexington Books.

Sherblom, J. C., Sullivan, C. F., & Sherblom, E. C. (1993). The What, the Whom, and the Hows of Survey Research. *Bulletin of the Association for Business Communication, 56*(4), 58-64.

Shi, T. H., & Fan, X. (2008). Comparing Response Rates from Web and Mail Surveys: A Meta-Analysis. *Field Methods, 20*(3), 249-271.

Sills, S. J., & Song, C. (2002). Innovations in Survey Research: An Application of Web Surveys. *Social Science Computer Review, 20*(1), 22-30.

Sinclair, K. (1980). *A History of New Zealand*. Harmondsworth, England: Penguin Books.

Sivo, S., Saunders, C., Chang, Q., & Jiang, J. J. (2006). How Low Should You Go? Low Response Rates and the Validity of Inference in IS Questionnaire Research. *Journal of Association for Information Systems Research, 7*(6), 351-414.

Slemrod, J. (2007). Cheating Ourselves: The Economics of Tax Evasion. *Journal of Economic Perspectives, 21*(1), 25-48.

Slemrod, J., Blumenthal, M., & Christian, C. (2001). Taxpayer Response to an Increased Probability of Audit: Evidence from a Controlled Experiment in Minnesota. *Journal of Public Economics, 79*(3), 455-483.

Slemrod, J., & Yitzhaki, S. (2002). Tax Avoidance, Evasion and Administration. In A. J. Auerbach & M. S. Feldstein (Eds.), *Handbook of Public Economics* (Vol. 3, pp. 1423-1470). New York: Elsevier.

Smith, K. W. (1992). Reciprocity and Fairness: Positive Incentives for Tax Compliance. In J. Slemrod (Ed.), *Why People Pay Taxes: Tax Compliance and Enforcement*. Ann Arbor: University of Michigan Press.

Song, Y., & Yarbrough, T. (1978). Tax Ethics and Taxpayer Attitudes: A Survey. *Public Administration Review, 38*(5), 442-452.

Sparks, P., Shepherd, R., Wieringa, N., & Zimmermanns, N. (1995). Perceived Behavioural Control, Unrealistic Optimism and Dietary Change: An Exploratory Study. *Appetite, 24*(3), 243-255.

Spicer, M. W. (1986). Civilization at a Discount: The Problem of Tax Evasion. *National Tax Journal, 39*, 13-20.

Spicer, M. W., & Becker, L. A. (1980). Fiscal Inequity and Tax Evasion: An Experimental Approach. *National Tax Journal, 33*(2), 171-175.

Spicer, M. W., & Hero, R. E. (1985). Tax Evasion and Heuristics: A Research Note. *Journal of Public Economics, 26*(2), 263-267.

Spicer, M. W., & Lundstedt, S. B. (1976). Understanding Tax Evasion. *Public Finance, 21*(2), 295-305.

Spicer, M. W., & Thomas, J. E. (1982). Audit Probabilities and the Tax Evasion Decision: An Experimental Approach. *Journal of Economic Psychology, 2*(2), 241-245.

Srinivasan, T. N. (1973). Tax Evasion: A Model. *Journal of Public Economics, 2*, 339-346.

Stalans, L. J., Smith, K. W., & Kinsey, K. A. (1989). When Do We Think about Detection? Structural Opportunity and Taxpaying Behavior. *Law & Social Inquiry, 14*(3), 481-503.

Stone, M. (1974). Cross-Validation Choices and Assessment of Statistical Predictions. *Journal of the Royal Statistical Society, 36*(2), 111-147.

Straub, D., Boudreau, M. C., & Gefen, D. (2004). Validation Guidelines for IS Positivist Research. *Communications of the Associations for Information Systems, 13*(24), 380-427.

Streukens, S., Wetzels, M., Daryanto, A., & De Ruyter, K. (2010). Analyzing Factorial Data Using PLS: Application in an Online Complaining Context. In V. Esposito Vinzi, W. W. Chin, J. Henseler & H. Wang (Eds.), *Handbook of Partial Least Squares: Concepts, Methods and Applications* (pp. 567-587). Heidelberg: Springer.

Strümpel, B. (1969). The Contribution of Survey Research to Public Finance. In A. T. Peacock (Ed.), *Quantitative Analysis in Public Finance* (pp. 13-22). New York: Praeger.

Tabachnick, B. G., & Fidell, L. S. (2007). *Using Multivariate Statistics*. Boston, MA: Pearson Education, Inc.

Task Force on Tax Reform. (1982). *Report of the Task Force on Tax Reform, Report of the New Zealand Tax Force on Tax Reform*. Wellington: Government Printer.

Tax Working Group. (2010). *A Tax System for New Zealand's Future: Report of the Victoria University of Wellington Tax Working Group*. Wellington: New Zealand.

Taylor, N. (2001). *Taxpayers Who Complain about Paying Tax: What Differentiates Those Who Complain From Those Who Don't? (*Working Paper No 9). Canberra: The Australian National University.

Taylor, N. (2003). Understanding Taxpayer Attitudes Through Understanding Taxpayer Identities. In V. Braithwaite (Ed.), *In Taxing Democracy: Understanding Tax Avoidance and Evasion*. Aldershot: Ashgate.

Taylor, S., & Todd, P. (1995). Decomposition and Crossover Effects in the Theory of Planned Behavior: A Study of Consumer Adoption Intentions. *International Journal of Research in Marketing, 12*, 137-156.

Tenenhaus, M., Amato, S., & Esposito Vinzi, V. (2004). A Global Goodness-of-Fit for PLS Structural Equation Modelling, In Proceedings of the XLII SIS Scientific Meeting Contributed Papers (pp. 739-742). Padova, Italy: Cooperativa Libraria Editrice Universita Di Padova.

Tenenhaus, M., Esposito Vinzi, V., Chatelin, Y. M., & Lauro, C. (2005). PLS Path Modeling. *Computational Statistics and Data Analysis, 48*, 159-205.

Terry, D. J., & O'Leary, J. E. (1995). The Theory of Planned Behavior: The Effects of Perceived Behavioural Control and Self-Efficacy. *British Journal of Social Psychology, 34*, 199-220.

Thibaut, J., Friedland, N., & Walker, L. (1974). Compliance with Rules: Some Social Determinants. *Journal of Personality and Social Psychology, 30*(6), 792-801.

Thibaut, J., & Walker, L. (1975). *Procedural Justice: A Psychological Analysis*. Hillsdale, N.J: Lawrence Erlbaum.

Thurman, Q. C. (1991). Taxpayer Noncompliance and General Prevention: An Expansion of the Deterrence Model. *Public Finance, 46*(2), 289-298.

Thurman, Q. C., John, C. St., & Riggs, L. (1984). Neutralization and Tax Evasion: How Effective Would a Moral Appeal Be in Improving Compliance to Tax Laws? *Law and Policy, 6*, 309-327.

Tittle, C. (1980). *Sanctions and Social Deviance: The Question of Deterrence*. New York: Praeger.

Tittle, C., & Logan, C. (1973). Sanctions and Deviance: Evidence and Remaining Questions. *Law and Society Review, 7*(3), 371-389.

Tittle, C., & Rowe, A. (1973). Moral Appeal, Sanctions Threat, and Deviance: An Experimental Test. *Social Problems, 20*(4), 488-498.

Tittle, C. R. (1969). Crime Rates and Legal Sanctions. *Social Problems, 16*(4), 409-423.

Tittle, C. R., & Hill, R. J. (1967). The Accuracy of Self-Reported Data and Prediction of Political Activity. *Public Opinion Quarterly, 31*(1), 103-106.

Torgler, B. (2007). *Tax Compliance and Tax Morale: A Theoretical and Empirical Analysis*. Cheltenham, UK: Edward Elgar.

Torgler, B., & Murphy, K. (2004). Tax Morale in Australia: What Shapes it and Has it Changed Over Time? *Journal of Australian Taxation, 7*, 298-335.

Trafimow, D., & Findlay, K. (1996). The Importance of Subjective Norms for a Minority of People: Between Subjects and Within Subjects Analyses. *Personality and Social Psychology Bulletin, 22*, 820-828.

Tran-Nam, B., & Karlinsky, S. (2008). *Small Business Tax Law Complexity in Australia*. Paper presented at the 8th International Tax Administration Conference, University of New South Wales, Australia.

Traxler, C. (2010). Social Norms and Conditional Cooperative Taxpayers. *European Journal of Political Economy, 26*(1), 89-103.

Triandis, H. (1977). *Interpersonal Behaviour*. Monterey CA: Brooks/Cole.

Trivedi, V. U., Shehata, M., & Lynn, B. (2003). Impact of Personal and Situational Factors on Taxpayer Compliance: An Experimental Analysis. *Journal of Business Ethics, 47*(3), 175-197.

Trivedi, V. U., Shehata, M., & Mestelman, S. (2005). Attitudes, Incentives, and Tax Compliance. *Canadian Tax Journal, 53*(1), 29-61.

Troutman, C. S. (1993). *Moral Commitment to Tax Compliance as Measured by the Development of Moral Reasoning and Attitudes Towards the Fairness of the Tax Laws.* Unpublished Doctoral Dissertation, Oklahoma State University, Oklahoma.

Turkyilmaz, A., Tatoglu, E., Zaim, S., & Ozkan, C. (2010). Use of Partial Least Squares (PLS) in TQM Research: TQM Practices and Business Performance in SMEs. In V. Esposito Vinzi, W. W. Chin, J. Henseler & H. Wang (Eds.), *Handbook of Partial Least Squares: Concepts, Methods and Applications* (pp. 605-620). Heidelberg: Springer.

Turner, J. C. (1991). *Social Influences*. Milton Keynes: Open University Press.

Tyler, T. R. (2001). Trust and Law Abidingness: A Proactive Model of Social Regulation. *Boston University Law Review 81*, 361-404.

Tyler, T. R. (1988). What is Procedural Justice? Criteria Used by Citizens to Assess The Fairness of Legal Procedure. *Law & Society Review, 22*(2), 103-136.

Tyler, T. R. (1997). The Psychology of Legitimacy: A Relational Perspective on Voluntary Deference to Authorities. *Personality and Social Psychology Review, 1*, 323-345.

Tyler, T. R. (2000). *Cooperation in Groups: Procedural Justice, Social Identity, and Behavioral Engagement*. Ann Arbor: Braun-Brumfield.

Tyler, T. R. (2001). Social Justice. In R. Brown & S. Gaertner (Eds.), *Blackwell Handbook of Social Psychology: Intergroup Processes* (pp. 344-364). Oxford: Blackwell.

Tyler, T. R. (2007). Procedural Justice. In R. F. Baumeister & D. Kathleen (Eds.), *Encyclopedia of Social Psychology* (pp. 704-705). Thousand Oaks, CA: Sage Publications Inc.

Tyler, T. R. (2010). Sanctions and Procedural Justice Theory. In F. T. Cullen & P. Wilcox (Eds.), *Encyclopedia of Criminological Theory* (pp. 972-975). Thousand Oaks, CA: Sage Reference.

Tyler, T. R., Boeckmann, R. J., Smith, H. J., & Huo, Y. J. (1997). *Social Justice in a Diverse Society*. Boulder, CO, US: Westview Press.

Tyler, T. R., & Folger, R. (1980). Distributional and Procedural Aspects of Satisfaction with Citizen-Police Encounters. *Basic and Applied Social Psychology, 1*(4), 281-292.

Tyler, T. R., & Smith, H. J. (1998). Social Justice and Social Movements. In D. T. Gilbert, S. T. Fiske & G. Lindzey (Eds.), *The Handbook of Social Psychology* (pp. 595-629). Boston: McGraw-Hill.

Urbach, N., & Ahlemann, F. (2010). Structural Equation Modeling in Information Systems Research Using Partial Least Squares. *Journal of Information Technology Theory and Application, 11*(2), 5-40.

Van Dijke, M., & Verboon, P. (2010). Trust in Authorities as a Boundary Condition to Procedural Fairness Effects on Tax Compliance. *Journal of Economic Psychology, 31*(1), 80-91.

Van Prooijen, J. W., De Cremer, D., Van Beest, I., Ståhl, T., Van Dijke, M., & Van Lange, P. A. M. (2008). The Egocentric Nature of Procedural Justice: Social Value Orientation as Moderator of Reactions to Decision-making Procedures. *Journal of Experimental Social Psychology, 44*, 1303-1315.

Varma, K. N., & Doob, A. N. (1998). Deterring Economic Crimes: The Case of Tax Evasion. *Canadian Journal of Criminology, 40*, 165-184.

Vatanasakdakul, S. (2007). *An Investigation of the Appropriateness of Internet Technology for Inter-Firm Communication in the Thai Tourist Industry.* Unpublished Doctoral Dissertation, University of New South Wales, Sydney, Australia.

Venik, S. (1999). *A Model of Global Marketing in Multinational Firms: An Empirical Investigation.* Unpublished Doctoral Dissertation, University of New South Wales, Sydney, Australia.

Violette, G. (1989). Effects of Communicating Sanctions on Taxpayer Compliance. *Journal of the American Taxation Association, 11*(1), 92-104.

Vogel, J. (1974). Taxation and Public Opinion in Sweden: An Interpretation of Recent Survey Data. *National Tax Journal, 27*(4), 499-513.

Von Hirsch, A., Bottoms, A. E., Burney, E., & Wickstrom, P. O. (1999). *Criminal Deterrence and Sentence Severity*. Oxford: Hart Publishing.

Vosslamber, R. J. (2010). *Taxing and Pleasing: The Rhetoric and Reality of Vertical Equity in the Development of the New Zealand Income Tax on Employees, 1891 to 1984.* Unpublished Doctoral Dissertation, University of Canterbury.

Wallschutzky, I. G. (1984). Possible Causes for Tax Evasion. *Journal of Economic Psychology,* 5(4), 371-384.

Wallschutzky, I. G. (1993). *Tax Compliance: Issues in Research Methods*. Paper presented at the Australian Taxation Office Research Conference Part 2, Canberra.

Warneryd, K. E., & Walerud, B. (1982). Taxes and Economic Behavior: Some Interview Data on Tax Evasion in Sweden. *Journal of Economic Psychology,* 2(3), 187-211.

Warshaw, P. R., & Davis, F. D. (1985). Disentangling Behavioural Intentions and Behavioural Expectations. *Journal of Experimental Social Psychology,* 21, 213-228.

Webley, P., Robben, H. S. J., Elffers, H., & Hessing, D. J. (1991). *Tax Evasion: An Experimental Approach*. Cambridge, UK: Cambridge University Press.

Weck, H. (1983). Schattenwirtschaft: Eine Möglichkeit zur Einschränkung der öffentlichen Verwaltung? *Eine ökonomische Analyse, Finanzwissenschaftliche Schriften 22. Bern: Lang*.

Welch, M. R., Xu, Y., Bjarnason, T., Petee, T., O'Donnell, P., & Margo, P. (2005). But Everybody Does it. The Effects of Perceptions, Moral Pressures, and Informal Sanctions on Tax Cheating. *Sociological Spectrum, 25*(1), 21-52.

Wenzel, M. (2002a). The Impact of Outcome Orientation and Justice Concerns on Tax Compliance: The Role of Taxpayers' Identity. *Journal of Applied Psychology, 87*(4), 629-645.

Wenzel, M. (2002b). *Principles of Procedural Fairness in Reminder Letters: A Field Experiment. Centre for Tax System Integrity* (Working Paper No. 42). Canberra: The Australian National University.

Wenzel, M. (2005a). Motivation or Rationalization? Causal Relations Between Ethics, Norms and Tax Compliance. *Journal of Economic Psychology, 24*(4), 491-510.

Wenzel, M. (2005b). Misperceptions of Social Norms about Tax Compliance: From Theory to Intervention. *Journal of Economic Psychology, 26*, 862-883.

Werts, C. E., Linn, R. L., & Joreskorg, K. G. (1974). Interclass Reliability Estimates: Testing Structural Assumptions. *Educational and Psychological Measurement, 34*, 25-33.

Westat, I. (1980). *Individual Income Tax Compliance Factors Study: Qualitative Research Results.* Prepared for the Internal Revenue Service. Rockville, MD.

Whitmore, W. J. (1996). Mail Survey Premiums and Response Bias. *Journal of Marketing Research, 3*, 46-50.

Wilson, B. (2010). Using PLS to Investigate Interaction Effects Between Higher Order Branding Constructs. In V. Esposito Vinzi, W. W. Chin, J. Henseler & H. Wang (Eds.), *Handbook of Partial Least Squares: Concepts, Methods and Applications* (pp. 621-652). Heidelberg: Springer.

Wilson, P., Walker, J., & Mukherjee, S. (1986). *How the Public Sees Crime: An Australian Survey*. Canberra: Australian Institute of Criminology.

Witte, A., & Woodbury, D. F. (1985). The Effect of Tax Laws and Tax Administration on Tax Compliance: The Case of the U.S. Individual Income Tax. *National Tax Journal, 38*(1), 1-13.

Wold, H. (1980a). Model Construction and Evaluation When Theoretical Knowledge is Scarce: Theory and Application of Partial Least Squares. In J. Kmenta & J. B. Ramsey (Eds.), *Evaluation of Econometric Models* (pp. 47-74). New York: Academic Press.

Wold, H. (1980b). Soft Modeling: Intermediate Between Traditional Model Building and Data Analysis. *Mathematical Statistics, 6*, 333-346.

Wold, H. (1982). Soft Modelling: The Basic Design and Some Extensions. In K. G. Joreskog & H. Wold (Eds.), *Systems Under Indirect Observations: Causality, Structure, Prediction, Part 2* (pp. 1-54). Amsterdam: North-Holland.

Wold, H. (1985). Systems Analysis by Partial Least Squares. In P. Nijkamp, H. Leitner & W. Wrigley (Eds.), *Measuring the Immeasurable* (pp. 221-251). Dordrecht: Martinus Nijhoff.

Worsham, R. G. (1996). The Effect of Tax Authority Behaviour on Taxpayer Compliance: A Procedural Justice Approach. *Journal of the American Taxation Association, 18*(2), 19-39.

Wrong, D. H. (1961). The Oversocialized Conception of Man in Modern Sociology. *American Social Revenue, 26*(2), 183-193.

Wu, R. (2012). *A Study on the Appropriateness for Adopting 'Universal' Definitions for Tax Compliance and Non-Compliance: A New Zealand Case Study Approach.* Unpublished Masters Thesis, University of Canterbury, Christchurch.

Yitzhaki, S. (1974). A Note on Income Tax Evasion: A Theoretical Analysis. *Journal of Public Economics, 3*(2), 201-202.

Yong, S. (2009). A Critical Evaluation of the Economic Deterrence Model on Tax Compliance. *The New Zealand Journal of Taxation Law and Policy, 12(2)*, 95-116.

Young, H. M. (1991). Operationalizing the Theory of Planned Behavior. *Research in Nursing & Health, 14*, 137-144.

Yue, W. (2004). *Predicting the Citation Impact of Clinical Neurology Journals Using Structural Equation Modeling with Partial Least Squares.* Unpublished Doctoral Dissertation, University of New South Wales, Sydney, Australia.

Zanna, M. P., & Rempel, J. K. (1988). Attitudes: A New Look at an Old Concept. In D. B. Tal & A. W. Kruglanski (Eds.), *The Social Psychology of Knowledge* (pp. 315-334). Cambridge: University Press.

Ziegler, S. J. (2006). Increasing Response Rates in Mail Surveys Without Increasing Error: A Research Note. *Criminal Justice, 17*(1), 22-31.

Zimring, F., & Hawkins, G. (1973). *Deterrence: The Legal Threat in Crime Control*. Chicago: University of Chicago Press.

Appendix 1: Letter of Approval from the Human Ethics Committee, University of Canterbury

UNIVERSITY OF CANTERBURY
Te Whare Wānanga o Waitaha
CHRISTCHURCH NEW ZEALAND

HEC Ref: 2006/41

10 July 2006

Ms Martha Smart
Accountancy, Finance & Information Systems
UNIVERSITY OF CANTERBURY

Dear Martha

The Human Ethics Committee advises that your research proposal "An empirical investigation into the effect of the compliance and penalties regime on voluntary tax compliance: A New Zealand study." has been considered and approved.

Yours sincerely

pp. Wendy

Dr Alison Loveridge
Chair, Human Ethics Committee

Appendix 2: The Proposed Model's Construct Definition and Measures

Constructs	Item	Item Code
Attitudes 1 and 2 refer to attitude towards tax compliance behaviour as measured by the deterrent effects of formal and informal sanctions.		
Attitude 1 **(ATT1)** (Informal Sanctions)	**Guilt Feeling** a) V9 - I would not feel guilty if I underreport my income in my next tax return. A*GREE/DISAGREE.* ® b) V10 - For me to feel guilty for underreporting my income is *GOOD/BAD.* ® **Moral Obligation** a) V13 - I believe I have a moral obligation to report all my income in my next tax return. *AGREE/DISAGREE.* b) V14 - Ensuring that I comply with my moral obligations is *IMPORTANT/ UNIMPORTANT.* **Civic Duty** a) V6 - Underreporting my income in my next tax return would be *BENEFICIAL*/*HARMFUL* to our society as a whole. ® b) V7 - For me to feel than I have made a positive contribution to society through my taxes is *GOOD/BAD*.	**GUILT** **MORAL** **CIVIC**
Attitude 2 **(ATT2)** (Formal Sanctions)	**Certainty of Punishment** (a) V8 - If I underreport my income in my next tax return, I expect the IRD will impose penalties on the shortfall. *LIKELY/UNLIKELY*. (b) V5 - For me to be penalised financially for underreporting my income is *GOOD/BAD*. ® **Severity of Punishment** (a) V4 - If I underreport my income in my next tax return, I expect the IRD will detect the unreported income and impose monetary penalties. *LIKELY/UNLIKELY*. (b) V16 - If I underreport my income in my next tax return, I expect the penalties imposed by the IRD will be *SEVERE/LENIENT.* **Certainty of Detection** (a) V19 - If I underreport my income in my next tax return, I expect my returns will be audited by the IRD. *LIKELY/UNLIKELY*. (b) V15 - If I underreport my income in my next tax return, I expect the IRD will detect it through an audit. *LIKELY/UNLIKELY*.	**COPun** **SOPun** **CODet**
Subjective Norms refer to how respondents believe important referents would want them to behave, and how important it is for them to comply with these beliefs.		
Subjective Norms **(SNORM)**	**Expectation of Referents** a) V23 - Most people who are important to me think that I should report all my income in my next tax return. *AGREE/DISAGREE.* b) V24 -In general, I want to do what most people who are important to me think I should do. *AGREE/DISAGREE*. **Behaviour of Referents** a) V25- Most people who are important to me would not include all their income in their next tax return. *AGREE/DISAGREE.* ® b) V26 - Generally, I would do what I believe most people who are important to me would do if they were in a similar situation. *AGREE/DISAGREE.* **Response from Referents** a) V27 - Most people who are important to me would not respect me if I underreport my income in my next tax return. *AGREE/DISAGREE.* b) V28 - I would be deterred from underreporting my income if I believe that I will lose the respect of most people who are important to me. *AGREE/DISAGRE.*	**SNORM1** **SNORM2** **SNORM3**

Perceived Behavioural Control refers to barriers or factors that may allow/facilitate or prevent respondents from undertaking the behaviour of interest.		
Perceived Behavioural Control (PBC)	**PBC1 –(Opportunity)** a) V22 - If I have the opportunity I intend to underreport my income in my next income tax return. *AGREE/DISAGREE.* ® b) V12 - How often would you encounter opportunities to underreport your income in your tax return. *FREQUENT/INFREQUENT.* ® **PBC2 –(3rd Party Reporting)** a) V17 - If all my income is subject to reporting by others (employers, banks, etc) it would be difficult for me to underreport my income in my next tax return. *AGREE/DISAGREE.* b) V18 - How often do you receive income that is not subject to reporting by others. *FREQUENT/INFREQUENT.* ® **PBC3 (Financial Distress)** a) V20 - If I encounter any financial pressure, it would be easy for me to justify underreporting my income in my next tax return. *AGREE/DISAGREE*. ® b) V21 - How often would you encounter financial pressures that require you to underreport your income? *FREQUENT/INFREQUENT*. ®	**PBC1** **PBC2** **PBC3**
Behaviour refers to respondents' past behaviour in terms of the frequency of non-compliant behaviour and the level of non-compliance (measured by the amount of income suppressed).		
Behaviour (BEHV)	**V2** - How much of your income did you report in your last tax return, or the latest return you filed? *ALL/NONE.* **V3** - How often have you underreported your income in the past 8 years? *INFREQUENT/FREQUENT.*	**BEH1** **BEH2**
Behavioural Intent refers to the responses to a hypothetical scenario in terms of what the respondents would do if faced with a similar situation.		
Behavioural Intent (BI)	**V1 -** If you were Joe, how likely would it be that you would include the $5,000 in your next tax return. *LIKELY/UNLIKELY.* **GV4 -** I am willing to do the right thing and pay the correct amount of taxes. *AGREE/DISAGREE*.	**BI1** **BI2**
Procedural Injustice refers to the perceived unfairness of the procedures used in the application of the Compliance and Penalties Regime (CPR) (or vice versa, based on procedural justice theory).		
Procedural Justice of the CPR (CnP)	**TXAU1** - The IRD always explains clearly the decisions they make. **TXAU2 -** The IRD administers the tax law fairly across all taxpayers (individuals and small businesses and large corporations). **PS3** - The penalties legislation provides sufficient clarity as to how the penalties system will be applied by IRD when there is a tax shortfall. **PS4** - The penalties legislation provides a sufficient degree of certainty as to when and under what circumstances penalties will be imposed when there is a tax shortfall. **PS12** - The IRD will consider your point of view in any dispute you have regarding your tax affairs and provide the opportunity to have an input in the outcome. **PS16 -** The IRD has the commercial expertise for making judgements on taxpayers' business systems and processes, and is able to use this expertise to ensure penalties are imposed fairly. **PS1 -** Penalties and punishments for not complying with the tax laws should be imposed in order to punish wrongdoing (for punishment). **PS2 -** Penalties and punishments should not be used to punish past wrong-doing; rather it should be used to prevent future wrongdoings (for prevention).	**CnP1** **CnP2** **CnP3** **CnP4** **CnP5** **CnP**6 **CnP7** **CnP8**
Effectiveness of the Compliance and Penalties Regime (CPR) measures respondents' perceptions of the effectiveness of the CPR in deterring tax noncompliance.		

Effectiveness of the CPR (CnPeff)	**PS5** - The penalties system is very effective in increasing tax compliance.	**CnPeff1**
	PS6 - Most taxpayers comply with their tax obligations because of the fear of being penalised under the current penalties system.	**CnPeff2**
	OTH2 - Most people pay taxes to avoid being penalised.	**CnPeff3**
	PS13 - Most people resent having to pay the penalties on any tax shortfall in addition to repaying the tax shortfall and the interest imposed on the shortfall. ®	**CnPeff4**
Societal Norms refer to respondents' perceptions of the prevalence of compliance (or noncompliance) among the general population.		
Societal Norms (OTHERS)	**OTH1** - Most people will do cash-payment jobs if the opportunity arises. ®	**OTH1**
	OTH11 - Most people generally want to comply with the tax laws.	**OTH2**
	OTH3 - Most people would report businesses that do cash-payment jobs to the IRD.	**OTH3**
	OTH4 - Most people would be happy to pay less for goods and services from businesses that do not pay taxes. ®	**OTH4**
	OTH5 - Most people would rather pay more for goods and services from businesses that pay taxes.	**OTH5**
Tax Authority refers to respondents' general perception of the tax authority.		
Tax Authority (TXAU)	**PS7** - The IRD is not flexible when imposing penalties for non-compliance. ®	**TXAU1**
	PS10 - The IRD tends to impose penalties on individuals and small businesses more often than large businesses. ®	**TXAU2**
	TXAU3 - The IRD listens to powerful interest groups and not enough to ordinary New Zealanders.	**TXAU3**
	TXAU4 - The IRD does not provide us with sufficient information on the penalties regime. ®	**TXAU4**
	TXAU5 - The IRD tends to spend too much time on individuals and small businesses and lets large corporations get away with paying less tax. ®	**TXAU5**
	TXAU6 - The IRD tends to spend too much time and resources in detection and punishment instead of assisting and educating people to comply. ®	**TXAU6**
	TXAU7 - The IRD effectively promotes the positive aspects of paying taxes.	**TXAU7**
	GV3 - It is much easier to get information for completing my tax return from other sources than from the IRD. ®	**TXAU8**
Tax System refers to respondents general perceptions of the tax system (in terms of fairness, cost of complying, and simplicity of the system).		
Tax System (TxSy)	**TxSy1** - Ensuring everyone pays their fair share of taxes is important for a fair system.	**TXSY1**
	TxSy2 - Keeping the cost of administering the tax system down is important in encouraging compliance with the tax laws.	**TXSY2**
	TxSy3 - A simpler and easier to understand tax system will encourage more compliance.	**TXSY3**
	TxSy4 - Complying with the tax laws is costly and time consuming. ®	**TXSY4**
Fairness refers to the perceived fairness of the Compliance and Penalties Regime (CPR) and measures respondents' perceptions of the general fairness of the CPR.		
Fairness of the CPR (CnPfrn)	**PS8** - Penalties should be imposed based on the ability to pay or affordability	**FRN1**
	PS9 - The penalty system does not differentiate between intentional noncompliance and unintentional noncompliance. ®	**FRN2**
	PS15 - The IRD should not impose any penalties when taxpayers voluntarily disclose an unintentional mistake in their return.	**FRN3**
	PS11 - Individuals and small businesses have more difficulty in paying the penalties imposed for noncompliance than large businesses.	**FRN4**
	PS17 - The penalty system is quite harsh when you consider that most people try their best to pay the correct amount of taxes. ®	**FRN5**
Motivational Postures (or Social Distance) refer to the motivational postures taxpayers adopt, which depict the quality of the relationship between the tax authority and the taxpayers.		

Motivational Postures (or Social Distance)(DST)	**Commitment**	
	GV10 - The tax system is very efficient in allocating our tax dollars.	**DST10**
	GV11 - I think it is my moral obligation to support the tax system.	**DST11**
	Capitulation	
	GV5 - If you cooperate with the IRD they are likely to cooperate with you.	**DST5**
	GV8 - The IRD is helpful to those who have difficulty in meeting their tax obligations.	**DST8**
	Resistance	
	GV12 - The IRD is more interested in catching and punishing you for not complying than in helping you to comply.	**DST12**
	GV13 - It is not possible to satisfy the IRD completely, they always find something wrong with your tax returns.	**DST13**
	Disengagement	
	GV6 - I do not want to know or care about what the IRD expects of me.	**DST6**
	GV7- If the IRD gets tough with me; I will become uncooperative with them.	**DST7**

Note:

1. The four TPB constructs comprise composite measures (a x b).
2. The alpha numeric numbers represent the subheadings and question numbers. For example, GV7 refers to question 7 under the subheading *General Views (GV)*. Other subheadings include: The Tax System (TxSy); The Penalty System (PS); The Tax Authority (TXAU); Perception of Other Taxpayers (OTHERS). Questions relating to the TPB variables are numbered as v1 to v28.
3. The last column displays the codes for the corresponding items or measures. The development of the questionnaire was discussed in Chapter 5.
4. ® implies that the responses have been reversed.

Appendix 3: Survey Instrument

SURVEY OF TAX COMPLIANCE PERCEPTIONS

SECTION A

Please read the following statements or questions and respond by circling the number that best describes your opinion. For example, in the first question, 1 indicates that you are *extremely likely* to perform the behaviour, whereas 7 indicates that it is *extremely unlikely* that you will perform the behaviour.

1. Joe was paid $5,000 in cash for work that was outside his regular job. He knows that because the payment was in cash and not recorded anywhere, it would be difficult for the Inland Revenue Department ("the IRD") to detect this income.

If you were Joe, how likely would it be that you would include the $5,000 in your next tax return?

LIKELY 1----------2----------3----------4----------5----------6----------7 **UNLIKELY**
extremely quite slightly unsure slightly quite extremely

2. How much of your income did you report in your last tax return, or the latest return you filed? If you are unsure, please tick the 'Not Sure' box. **NOT SURE** ☐

ALL 1----------2----------3----------4----------5----------6----------7 **NONE**
included all included half included none
100% (83%) **75%** (67%) **50%** (33%) **25%** (16%) **0%**

3. How often have you underreported your income in the past 8 years? If you are unsure, please tick the "Not Sure" box. **NOT SURE** ☐

INFREQUENT 1----------2----------3----------4----------5----------6----------7 **FREQUENT**
none once twice 3 times 4 times 5 times more than 5 times

4. If I underreport my income in my next tax return, I expect the IRD will detect the unreported income and impose monetary penalties.

LIKELY 1----------2----------3----------4----------5----------6----------7 **UNLIKELY**
extremely quite slightly neither slightly quite extremely

5. For me to be penalised financially for underreporting my income is:

GOOD 1----------2----------3----------4----------5----------6----------7 **BAD**
extremely quite slightly neither slightly quite extremely

6. Underreporting my income in my next tax return would be _____to our society as a whole.

BENEFICIAL 1----------2----------3----------4----------5----------6----------7 **HARMFUL**
extremely quite slightly neither slightly quite extremely

7. For me to feel that I have made a positive contribution to society through my taxes is:

GOOD 1----------2----------3----------4----------5----------6----------7 **BAD**
extremely quite slightly neither slightly quite extremely

8. If I underreport my income in my next tax return, I expect the IRD will impose penalties on the shortfall.

LIKELY 1----------2----------3----------4----------5----------6----------7 **UNLIKELY**
extremely quite slightly neither slightly quite extremely

9. I would not feel guilty if I underreport my income in my next tax return.

AGREE 1----------2----------3----------4----------5----------6---------- 7 **DISAGREE**
strongly somewhat slightly neither slightly somewhat strongly

10. For me to feel guilty for underreporting my income is:

GOOD 1----------2----------3----------4----------5----------6----------7 **BAD**
extremely quite slightly neither slightly quite extremely

11. If I wanted to, it would be easy for me to underreport my income in my next tax return.

AGREE 1----------2----------3----------4----------5----------6---------- 7 **DISAGREE**
strongly somewhat slightly neither slightly somewhat strongly

12. How often would you encounter opportunities to underreport your income in your tax return?

FREQUENT 1----------2----------3----------4----------5----------6----------7 **INFREQUENT**
very somewhat slightly not sure slightly somewhat very

13. I believe I have a moral obligation to report all my income in my next tax return.

AGREE 1----------2----------3----------4----------5----------6---------- 7 **DISAGREE**
strongly somewhat slightly neither slightly somewhat strongly

14. Ensuring that I comply with my moral obligations is:

IMPORTANT 1----------2----------3----------4----------5----------6----------7 **UNIMPORTANT**
extremely quite slightly neither slightly quite extremely

15. If I underreport my income in my next tax return, I expect the IRD will detect it through an audit.

LIKELY 1----------2----------3----------4----------5----------6----------7 **UNLIKELY**
extremely quite slightly neither slightly quite extremely

16. If I underreport my income in my next tax return, I expect the penalties imposed by the IRD will be:

SEVERE 1----------2----------3----------4----------5----------6----------7 **LENIENT**
extremely quite slightly neither slightly quite extremely

17. If all my income is subject to reporting by others (employers, banks, etc.), it would be difficult for me to underreport my income in my next tax return.

AGREE 1----------2----------3----------4----------5----------6----------7 **DISAGREE**
strongly somewhat slightly neither slightly somewhat strongly

18. How often do you receive income that is not subject to reporting by others?

FREQUENT 1----------2----------3----------4----------5----------6----------7 **INFREQUENT**
very somewhat slightly not sure slightly somewhat very

19. If I underreport my income in my next tax return, I expect my returns will be audited by the IRD.

LIKELY 1----------2----------3----------4----------5----------6----------7 **UNLIKELY**
extremely quite slightly not sure slightly quite extremely

20. If I encounter any financial pressure, it would be easy for me to justify underreporting my income in my next tax return.

AGREE 1----------2----------3----------4----------5----------6----------7 **DISAGREE**
strongly somewhat slightly neither slightly somewhat strongly

21. How often would you encounter financial pressures that require you to underreport your income?

FREQUENT 1----------2----------3----------4----------5----------6----------7 **INFREQUENT**
very somewhat slightly not sure slightly somewhat very

22. If I have the opportunity I intend to underreport my income in my next income tax return.

AGREE 1----------2----------3----------4----------5----------6----------7 **DISAGREE**
strongly somewhat slightly unsure slightly somewhat strongly

When answering the next 6 questions please think of the people or person who matters most to you and whose opinion you value most (i.e. spouse/partner/family/friends/business associates/peers/tax agents etc.)

1. Most people who are important to me think that I should report all my income in my next tax return.

AGREE 1----------2----------3----------4----------5----------6----------7 **DISAGREE**
strongly somewhat slightly neither slightly somewhat strongly

2. In general, I want to do what most people who are important to me think I should do.

AGREE 1----------2----------3----------4----------5----------6----------7 **DISAGREE**
strongly somewhat slightly neither slightly somewhat strongly

3. Most people who are important to me would not include all their income in their next tax return.

AGREE 1----------2----------3----------4----------5----------6----------7 **DISAGREE**
strongly somewhat slightly neither slightly somewhat strongly

4. Generally, I would do what I believe most people who are important to me would do if they were in a similar situation.

AGREE 1----------2----------3----------4----------5----------6----------7 **DISAGREE**
strongly somewhat slightly neither slightly somewhat strongly

5. Most people who are important to me would not respect me if I underreport my income in my next tax return.

AGREE 1----------2----------3----------4----------5----------6----------7 **DISAGREE**
strongly somewhat slightly neither slightly somewhat strongly

6. I would be deterred from underreporting my income if I believe that I will lose the respect of most people who are important to me.

AGREE 1----------2----------3----------4----------5----------6----------7 **DISAGREE**
strongly somewhat slightly neither slightly somewhat strongly

SECTION B

B1. The next question requires you to evaluate the severity of each of the offences listed below. Please tick a box for each of these offences to indicate your views on the seriousness of each offence.

Item	Description of Offence	Not Serious	Somewhat Serious	Serious	Very Serious	Extremely Serious
1	Bicycle theft worth $1,000					
2	Welfare fraud worth $1,000					
3	Not reporting tax of $1,000					
4	Defrauding a bank of $1,000					
5	Driving while slightly over the alcohol limit					
6	Speeding 10kph over the speed limit					
7	Smoking marijuana or cannabis					

B2. In the next question please rank the offences listed above in the order of seriousness, 1 being the most serious offence and 7 being the least serious offence in the list. (Please try not to use equal ranking).

Item	Description of Offence	Ranking
1	Bicycle theft worth $1,000	
2	Welfare fraud worth $1,000	
3	Not reporting tax of $1,000	
4	Defrauding a bank of $1,000	
5	Driving while slightly over the alcohol limit	
6	Speeding 10kph over the speed limit	
7	Smoking marijuana or cannabis	

SECTION C

C1. The following statements reflect some opinions regarding tax compliance behaviour. Please indicate your agreement or disagreement with each of these statements by circling the appropriate number. The statements all relate to civil penalties, which are imposed by the IRD for not complying with tax obligations and not to criminal penalties, which are imposed by the Courts for more serious tax offences.

If you:	Strongly Agree	circle 1
	Agree	circle 2
	Agree Slightly	circle 3
	Neutral or Undecided	circle 4
	Disagree Slightly	circle 5
	Disagree	circle 6
	Strongly Disagree	circle 7

	Strongly Agree						Strongly Disagree
The Tax System							
1. Ensuring everyone pays their fair share of taxes is important for a fair system.	1	2	3	4	5	6	7
2. Keeping the cost of administering the tax system down is important in encouraging compliance with the tax laws.	1	2	3	4	5	6	7
3. A simpler and easier to understand tax system will encourage more compliance.	1	2	3	4	5	6	7
4. Complying with the tax laws is costly and time consuming (compliance cost).	1	2	3	4	5	6	7
5. I am aware that there are many ways to arrange my financial affairs in order to reduce my tax liability.	1	2	3	4	5	6	7

	Strongly Agree						Strongly Disagree
The Penalty System							
1. Penalties and punishments for not complying with the tax laws should be imposed in order to punish wrongdoing (for punishment).	1	2	3	4	5	6	7
2. Penalties and punishments should not be used to punish past wrong-doing, rather, it should be used to prevent future wrongdoings (for prevention).	1	2	3	4	5	6	7
3. The penalties legislation provides sufficient clarity as to how the penalties system will be applied by IRD when there is a tax shortfall.	1	2	3	4	5	6	7
4. The penalties legislation provides a sufficient degree of certainty as to when and under what circumstances penalties will be imposed when there is a tax shortfall.	1	2	3	4	5	6	7
5. The penalties system is very effective in increasing tax compliance.	1	2	3	4	5	6	7
6. Most taxpayers comply with their tax obligations because of the fear of being penalised under the current penalties system.	1	2	3	4	5	6	7
7. The IRD is not flexible when imposing penalties for non-compliance.	1	2	3	4	5	6	7
8. Penalties should be imposed based on the ability to pay or affordability.	1	2	3	4	5	6	7
9. The penalty system does not differentiate between intentional non-compliance and unintentional non-compliance.	1	2	3	4	5	6	7
10. The IRD tends to impose penalties on individuals and small businesses more often than large businesses.	1	2	3	4	5	6	7
11. Individuals and small businesses have more difficulty in paying the penalties imposed for non-compliance than large businesses.	1	2	3	4	5	6	7
12. The IRD will consider your point of view in any dispute you have regarding your tax affairs and provide the opportunity to have an input in the outcome.	1	2	3	4	5	6	7
13. Most people resent having to pay the penalties on any tax shortfall in addition to repaying the tax shortfall and the interest imposed on the shortfall.	1	2	3	4	5	6	7
14. For first time minor offences, a warning letter and interest imposed on the tax shortfall would be sufficient to encourage future compliance with the tax law.	1	2	3	4	5	6	7
15. The IRD should not impose any penalties when taxpayers voluntarily disclose an unintentional mistake in their tax return.	1	2	3	4	5	6	7
16. The IRD has the commercial expertise for making judgements on taxpayers' business systems and processes, and is able to use this expertise to ensure penalties are imposed fairly.	1	2	3	4	5	6	7
17. The penalty system is quite harsh when you consider that most people try their best to pay the correct amount of taxes.	1	2	3	4	5	6	7
18. Publishing the names of serious tax offenders will deter non-compliant taxpayers from future non-compliance.	1	2	3	4	5	6	7
19. I am aware of my tax obligations and the standards that are required by the tax legislation.	1	2	3	4	5	6	7
20. IRD audits do not always detect unreported income.	1	2	3	4	5	6	7

	Strongly Agree						Strongly Disagree
The Penalty System (continue)							
21. Promoter penalties will deter the promotion of schemes that amount to an abusive tax position (i.e. have a dominant purpose of avoiding tax).	1	2	3	4	5	6	7
22. It is equitable to impose promoter penalties on promoters of schemes that amount to an abusive tax position	1	2	3	4	5	6	7
The Tax Authority							
1. The IRD always explains clearly the decisions they make.	1	2	3	4	5	6	7
2. The IRD administers the tax law fairly across all taxpayers (individuals, small businesses and large corporations).	1	2	3	4	5	6	7
3. The IRD listens to powerful interest groups and not enough to ordinary New Zealanders.	1	2	3	4	5	6	7
4. The IRD does not provide us with sufficient information on the penalties regime.	1	2	3	4	5	6	7
5. The IRD tends to focus too much on individuals and small businesses and lets large corporations get away with paying less tax.	1	2	3	4	5	6	7
6. The IRD tends to spend too much time and resources in detection and punishment instead of assisting and educating people to comply.	1	2	3	4	5	6	7
7. The IRD effectively promotes the positive aspects of paying taxes.	1	2	3	4	5	6	7
Perception of Other Taxpayers							
1. Most people will do cash-payment jobs if the opportunity arises.	1	2	3	4	5	6	7
2. Most people pay taxes to avoid being penalised.	1	2	3	4	5	6	7
3. Most people would report businesses that do cash-payment jobs to the IRD.	1	2	3	4	5	6	7
4. Most people would be happy to pay less for goods and services from businesses that do not pay taxes.	1	2	3	4	5	6	7
5. Most people would rather pay more for goods and services from businesses that pay taxes.	1	2	3	4	5	6	7
6. Most people engage tax accountants to ensure they comply fully with their tax obligations.	1	2	3	4	5	6	7
7. People who do not pay their fair share of taxes tend to believe that they are paying too much of their hard earned cash on taxes.	1	2	3	4	5	6	7
8. People stay out of the tax system to avoid the cost of complying with their tax obligations and to avoid the red tape involved in complying.	1	2	3	4	5	6	7
9. Most people engage tax accountants in order to exploit the tax loopholes.	1	2	3	4	5	6	7
10. Most people are aware of the current rules relating to penalties for non-compliance.	1	2	3	4	5	6	7
11. Most people generally want to comply with the tax laws.	1	2	3	4	5	6	7

	Strongly Agree						Strongly Disagree
General Views							
1. The IRD cannot do anything to make me pay tax if I do not want to.	1	2	3	4	5	6	7
2. The tax system is not perfect but it works well enough for most taxpayers.	1	2	3	4	5	6	7
3. It is much easier to get information for completing my tax return from other sources than from the IRD.	1	2	3	4	5	6	7
4. I am willing to do the right thing and pay the correct amount of taxes.	1	2	3	4	5	6	7
5. If you cooperate with the IRD they are likely to cooperate with you.	1	2	3	4	5	6	7
6. I do not want to know or care about what the IRD expects of me.	1	2	3	4	5	6	7
7. If the IRD gets tough with me, I will become uncooperative with them.	1	2	3	4	5	6	7
8. The IRD is helpful to those who have difficulty in meeting their tax obligations	1	2	3	4	5	6	7
9. If you do not cooperate with the IRD, they will get tough on you.	1	2	3	4	5	6	7
10. The tax system is very efficient in allocating our tax dollars.	1	2	3	4	5	6	7
11. I think it is my moral obligation to support the tax system.	1	2	3	4	5	6	7
12. The IRD is more interested in catching and punishing you for not complying than in helping you to comply.	1	2	3	4	5	6	7
13. It is not possible to satisfy the IRD completely, they always find something wrong with your tax returns.	1	2	3	4	5	6	7

C2. The next section applies only if you had a civil penalty imposed by the IRD in the last 8 years for underreporting your tax liabilities. If you have, please answer the questions that follow, or otherwise please go onto section D.

1. In terms of how much you were at fault, would you say that the penalty was justified?	1	2	3	4	5	6	7
2. I felt that my views were considered by the IRD in determining the outcome.	1	2	3	4	5	6	7
3. The penalties imposed was harsh considering that no one was hurt nor did anyone suffer from any monetary loss as a result of my non-compliance.	1	2	3	4	5	6	7
4. My tax position was clearly explained to me by the IRD during the process.	1	2	3	4	5	6	7
5. The penalties imposed have definitely deterred me from future non-compliance.	1	2	3	4	5	6	7
6. The process under the penalties regime was simple and easy to follow.	1	2	3	4	5	6	7
7. The economic cost (in terms of time and money) of going through the penalties process was significant.	1	2	3	4	5	6	7
8. The level of penalties imposed was relatively excessive.	1	2	3	4	5	6	7
9. I was happy with the process available in disputing the IRD's position in respect to the level of penalties imposed.	1	2	3	4	5	6	7
10. Paying the tax shortfall, the use-of-money interest charged on the tax shortfall plus the penalties imposed for the tax shortfall was harsh and unfair.	1	2	3	4	5	6	7
11. The emotional cost of going through the penalties process was significant.	1	2	3	4	5	6	7

SECTION D

Please answer the following questions by circling the answer that best describes you.

1. Age
a) Under 25 years
b) 25 – 44 years
c) 45 – 64 years
d) 65 years and over

2. Gender
a) Male
b) Female

3. Annual Income (Gross)
a) Less than $20,000
b) $20,000 - $39,999
c) $40,000 - $59,999
d) $60,000 and over
e) None

4. Number of Years in Paid Employment (and/or Self-Employed)
a) Less than 5 years
b) 5 to 10 years
c) More than 10 years
d) None

5. Main Source of Income
a) Salary/wages
b) Interest and/or dividends
c) Rents/royalties
d) Self-employed
e) Full-time student
f) Social welfare benefits or pensions
g) Other: please specify _____

6. Type of Industry (If Employed/Self-Employed)
a) Manufacturing
b) Services
c) Health and social services
d) Local government
e) Central government
f) Other: please specify _____
g) Not in paid employment nor self-employed

7. Educational Attainment
a) Year 11 (5th Form) or under
b) Year 12 or 13 (6th or 7th Form)
c) Trade qualification/vocational training
d) University degree
e) Other: please specify _____

8. Professional Memberships
a) New Zealand Institute of Chartered Accountants
b) New Zealand Law Society
c) New Zealand Institute of Management
d) Other: please specify _____
e) None

9. In the Course of Your Work, Which of the Following Tasks Do You Perform
a) Prepare tax returns
b) Advise on tax matters
c) Perform audits
d) Prepare financial statements
e) Advise on business matters
f) Other: please specify _____
g) None

10. Source of Your Tax Information
a) Friends and family
b) Work or business associates
c) Employer
d) IRD (i.e. staff, publications, websites etc)
e) Tax agents (tax accountants or tax lawyers)
f) Media
g) Other: please specify _____
h) None

Additional Comments:

_____

_____

_____

_____

_____

_____

Thank you for your time and contribution.
If you would like to receive a summary of the results please email me with your contact details.

Appendix 4: Cover Letter to Participants

College of Business and Economics

Department of Accountancy, Finance & Information Systems
University of Canterbury
Private Bag 4800, Christchurch
Tel: +64 3 364 2604, Fax: + 64 3 364 2727

UNIVERSITY OF CANTERBURY
Te Whare Wānanga o Waitaha
CHRISTCHURCH NEW ZEALAND

14th August 2006

Dear Participant,

My name is Martha Smart, and I am a part-time PhD student in the Department of Accountancy, Finance and Information Systems at the University of Canterbury. Currently, I am conducting research on tax compliance behaviour and am seeking your co-operation in making this research a success through your participation.

You have been randomly selected from the electoral rolls to participate in this research, which is intended to provide useful insights into how the New Zealand tax laws affect people's compliance behaviour. Your participation is voluntary. Nevertheless, for the results to be meaningful it is important that I receive back as many completed questionnaire as possible.

I would therefore appreciate it if you could answer all the questions included in the questionnaire by selecting the responses that best describes you or your opinion. Each question is included for a purpose. There are no correct or incorrect answers to any question. However, for your response to be useful, it is important that you answer all questions (except question 2 in section C if this does not apply to you). Any comments you may have would also be greatly appreciated. All remarks/comments will be read and considered.

This research has been reviewed and approved by the University of Canterbury's Human Ethics Committee and therefore subject to strict ethical guidelines. All responses will be treated in the strictest confidence and will only be used in this academic study. No one except my academic supervisor, Associate Professor Adrian Sawyer and I will have access to these. There are no markings on the questionnaire and as such, it will not be possible to identify you in any reports prepared for this study. However, should you still have any concerns you may contact my academic supervisor whose contact details are set out below.

Please send in your responses by 31st August 2006; however, if you are unable to meet the deadline I would still appreciate a late response. A self-addressed franked envelope is included for returning the questionnaire.

Your contribution is very much appreciated and if you wish to receive a summary of the results please fill in the request form enclosed and post it in the separate franked envelope provided which would ensure the anonymity of your response. Alternatively, you can e-mail me or my academic supervisor for a copy, which will be available by late 2006 or early 2007.

I look forward to receiving your responses and please contact my supervisor or me if you have any queries.

Yours sincerely

Martha Smart
PhD candidate, Department of Accountancy
Finance and Information Systems
University of Canterbury
Tel: (03) 3642987 Ext 7379
E-mail: msm43@student.canterbury.ac.nz

Associate Professor Adrian Sawyer
Department of Accountancy, Finance and
Information Systems
University of Canterbury
Tel: (03) 3642617
E-mail: adrian.sawyer@canterbury.ac.nz

Appendix 5:
SPSS Output for Paired Sample t-Test (Taxpayer Sample)

Paired Samples Statistics

		Mean	N	Std. Deviation	Std. Error Mean
Pair 1	SVA1	3.6111	180	1.01050	.07532
	SVA3	3.1000	180	1.25560	.09359
Pair 2	SVA2	4.0444	180	.98493	.07341
	SVA3	3.1000	180	1.25560	.09359
Pair 3	SVA4	3.8700	180	1.04672	.07802
	SVA3	3.1000	180	1.25560	.09359
Pair 4	SVA5	3.4327	180	1.20138	.08955
	SVA3	3.1000	180	1.25560	.09359
Pair 5	SVA6	2.0333	180	1.08262	.08069
	SVA3	3.1000	180	1.25560	.09359
Pair 6	SVA7	2.8889	180	1.50563	.11222
	SVA3	3.1000	180	1.25560	.09359

Paired Samples Test

		Paired Differences					t	df	Sig. (2-tailed)
					95% Confidence Interval of the Difference				
		Mean	Std. Deviation	Std. Error Mean	Lower	Upper			
Pair 1	SVA1 - SVA3	.51111	1.14574	.08540	.34259	.67963	5.985	179	.000
Pair 2	SVA2 - SVA3	.94444	1.11226	.08290	.78085	1.10804	11.392	179	.000
Pair 3	SVA4 - SVA3	.77001	1.02601	.07647	.61910	.92092	10.069	179	.000
Pair 4	SVA5 - SVA3	.33271	1.28346	.09566	.14393	.52148	3.478	179	.001
Pair 5	SVA6 - SVA3	-1.06667	1.21720	.09072	-1.24569	-.88764	-11.757	179	.000
Pair 6	SVA7 - SVA3	-.21111	1.51340	.11280	-.43370	.01148	-1.872	179	.063

Appendix 6:
SPSS Output for Paired Sample t-Test (Tax Agent Sample)

Paired Samples Statistics

		Mean	N	Std. Deviation	Std. Error Mean
Pair 1	SVA1	3.5488	164	1.14208	.08918
	SVA3	2.1280	164	1.05176	.08213
Pair 2	SVA2	2.8893	164	1.37202	.10714
	SVA3	2.1280	164	1.05176	.08213
Pair 3	SVA4	3.4146	164	1.06766	.08337
	SVA3	2.1280	164	1.05176	.08213
Pair 4	SVA5	4.0091	164	.95663	.07470
	SVA3	2.1280	164	1.05176	.08213
Pair 5	SVA6	3.6159	164	1.00550	.07852
	SVA3	2.1280	164	1.05176	.08213
Pair 6	SVA7	4.0610	164	.91809	.07169
	SVA3	2.1280	164	1.05176	.08213

Paired Samples Test

		Paired Differences					t	df	Sig. (2-tailed)
					95% Confidence Interval of the Difference				
		Mean	Std. Deviation	Std. Error Mean	Lower	Upper			
Pair 1	SVA1 - SVA3	1.42073	1.15639	.09030	1.24243	1.59904	15.734	163	.000
Pair 2	SVA2 - SVA3	.76128	1.44349	.11272	.53870	.98385	6.754	163	.000
Pair 3	SVA4 - SVA3	1.28659	1.34650	.10514	1.07896	1.49421	12.236	163	.000
Pair 4	SVA5 - SVA3	1.88101	1.35852	.10608	1.67154	2.09049	17.732	163	.000
Pair 5	SVA6 - SVA3	1.48780	1.33149	.10397	1.28250	1.69311	14.310	163	.000
Pair 6	SVA7 - SVA3	1.93293	1.26361	.09867	1.73809	2.12777	19.590	163	.000

Appendix 7: PLS Bootstrap Output (Taxpayer Sample)

```
Output results with Construct Level sign change preprocessing:
Bootstrap raw data generated for Dr. Annette Mills
Number of cases in full model: 180
Number of cases per sample: 180
Number of samples generated: 1000
Number of good samples: 1000
Outer Model Weights:
=========================================================================
                  Original    Mean of     Standard    T-Statistic
                   sample      subsamples  error
                   estimate
BEHVp    :
    BEH1             0.5195      0.5198      0.0240     21.6444
BEH2            0.5376      0.5386      0.0234     23.0197
BI       :
    BI1              0.4691      0.4720      0.0482      9.7331
    BI2              0.7475      0.7442      0.0478     15.6277
ATT1     :
CIVIC           0.4119      0.4091      0.0229     18.0133
GUILT           0.4396      0.4406      0.0340     12.9186
    MORAL            0.3784      0.3822      0.0415      9.1220
ATT2     :
    COPun            0.1064      0.1096      0.0928      1.1471
    SOPun            0.5417      0.5351      0.0598      9.0561
    CODet            0.5296      0.5273      0.0587      9.0295
SNORM    :
    SNORM1           0.5046      0.5033      0.0462     10.9150
    SNORM2           0.4136      0.4153      0.0518      7.9806
    SNORM3           0.3342      0.3285      0.0612      5.4606
OTHERS   :
    OTH1             0.4344      0.4318      0.0577      7.5251
    OTH3             0.3065      0.3043      0.0666      4.6000
    OTH4             0.3112      0.3050      0.0557      5.5871
    OTH5             0.3324      0.3353      0.0515      6.4600
PBC      :
    PBC1             0.4782      0.4778      0.0288     16.6289
    PBC2             0.2754      0.2777      0.0345      7.9887
    PBC3             0.3852      0.3830      0.0298     12.9056
TXSY     :
    TXSY2            0.8399      0.7823      0.1867      4.4976
    TXSY4            0.6238      0.6360      0.1971      3.1643
TXAU     :
    TXAU1            0.2268      0.2244      0.0578      3.9263
    TXAU2            0.2927      0.2959      0.0563      5.2031
    TXAU3            0.1986      0.1961      0.0677      2.9353
    TXAU4            0.1947      0.1944      0.0669      2.9099
    TXAU5            0.2165      0.2153      0.0381      5.6825
    TXAU6            0.1468      0.1403      0.0603      2.4361
CnP      :
    CnP1             0.1600      0.1669      0.0597      2.6784
    CnP2             0.3051      0.3031      0.0524      5.8227
    CnP3             0.2908      0.2890      0.0396      7.3356
    CnP4             0.3654      0.3614      0.0443      8.2417
    CnP6             0.1966      0.1894      0.0557      3.5296
CnPeff   :
    CnPeff1          0.2308      0.1994      0.2601      0.8874
    CnPeff2          0.6826      0.6543      0.1160      5.8843
    CnPeff3          0.3608      0.3398      0.1983      1.8194
DSTa     :
    DST6             0.4493      0.4197      0.2279      1.9715
    DST7             0.7337      0.7242      0.1868      3.9282
DSTb     :
    DST12            0.5509      0.5472      0.1386      3.9759
    DST13            0.5495      0.5483      0.1412      3.8913
DSTc     :
    DST5             0.5511      0.5191      0.1725      3.1944
    DST8             0.6037      0.6192      0.1362      4.4309
DSTd     :
    DST10            0.4621      0.4451      0.1391      3.3217
    DST11            0.7762      0.7754      0.1075      7.2227
=========================================================================
Outer Model Loadings:
=========================================================================
                  Original    Mean of     Standard    T-Statistic
                   sample      subsamples  error
                   estimate
BEHVp    :
(Composite Reliability =      0.944 , AVE =      0.895 )
    BEH1             0.9440      0.9428      0.0167     56.6570
    BEH2             0.9478      0.9468      0.0158     59.8835
BI       :
(Composite Reliability =      0.785 , AVE =      0.649 )
    BI1              0.7048      0.7043      0.0591     11.9241
    BI2              0.8954      0.8932      0.0233     38.3810

ATT1     :
(Composite Reliability =      0.855 , AVE =      0.663 )
    CIVIC            0.8291      0.8261      0.0272     30.4539
    GUILT            0.7888      0.7839      0.0389     20.2884
    MORAL            0.8236      0.8256      0.0249     33.1012
ATT2     :
(Composite Reliability =      0.815 , AVE =      0.607 )
    COPun            0.5127      0.5009      0.1276      4.0174
    SOPun            0.8828      0.8764      0.0309     28.5904
    CODet            0.8822      0.8796      0.0289     30.4903
SNORM    :
(Composite Reliability =      0.830 , AVE =      0.622 )
```

```
    SNORM1          0.8826      0.8832      0.0246     35.9507
    SNORM2          0.8009      0.7984      0.0544     14.7355
    SNORM3          0.6684      0.6632      0.0784      8.5222
OTHERS  :
(Composite Reliability =      0.806 , AVE =      0.512 )
    OTH1            0.8319      0.8296      0.0381     21.8460
    OTH3            0.6452      0.6434      0.0881      7.3264
    OTH4            0.6759      0.6698      0.0670     10.0942
    OTH5            0.6937      0.6946      0.0578     12.0060
PBC     :
(Composite Reliability =      0.904 , AVE =      0.758 )
    PBC1            0.9296      0.9295      0.0098     95.1633
    PBC2            0.8353      0.8351      0.0372     22.4771
    PBC3            0.8446      0.8423      0.0287     29.4615
TXSY    :
(Composite Reliability =      0.620 , AVE =      0.457 )
    TXSY2           0.7836      0.7208      0.2083      3.7622
    TXSY4           0.5480      0.5624      0.2127      2.5768
TXAU    :
(Composite Reliability =      0.904 , AVE =      0.612 )
    TXAU1           0.6712      0.6696      0.0610     11.0013
    TXAU2           0.8574      0.8574      0.0267     32.1024
    TXAU3           0.7830      0.7774      0.0534     14.6640
    TXAU4           0.7192      0.7150      0.0706     10.1920
    TXAU5           0.8584      0.8540      0.0295     29.0558
    TXAU6           0.7858      0.7793      0.0499     15.7418
CnP     :
(Composite Reliability =      0.858 , AVE =      0.552 )
    CnP1            0.6556      0.6599      0.0799      8.2061
    CnP2            0.7034      0.7033      0.0660     10.6525
    CnP3            0.8261      0.8229      0.0384     21.5048
    CnP4            0.8596      0.8596      0.0278     30.8868
    CnP6            0.6417      0.6302      0.0728      8.8165
CnPeff  :
(Composite Reliability =      0.763 , AVE =      0.532 )
    CnPeff1         0.4997      0.4518      0.2731      1.8300
    CnPeff2         0.9267      0.8839      0.0753     12.3144
    CnPeff3         0.6986      0.6570      0.1819      3.8408
DSTa    :
(Composite Reliability =      0.813 , AVE =      0.687 )
    DST6            0.7385      0.7129      0.1637      4.5100
    DST7            0.9108      0.8946      0.1024      8.8916
DSTb    :
(Composite Reliability =      0.905 , AVE =      0.826 )
    DST12           0.9091      0.8986      0.0600     15.1426
    DST13           0.9086      0.9008      0.0554     16.3949
DSTc    :
(Composite Reliability =      0.857 , AVE =      0.749 )
    DST5            0.8522      0.8272      0.1199      7.1048
    DST8            0.8786      0.8779      0.0710     12.3684
DSTd    :
(Composite Reliability =      0.760 , AVE =      0.619 )
    DST10           0.6611      0.6384      0.1387      4.7670
    DST11           0.8947      0.8914      0.0634     14.1180
========================================================================
Path Coefficients Table (Original Sample Estimate):
========================================================================
        BEHVp  BI     ATT1   ATT2   SNORM  OTHERS  PBC    TXSY TXAU CnP   CnPeff  DSTa  DSTb   DSTc   DSTd
BEHVp 0.0000 0.3410  0.0000 0.0000  0.0000 0.0000 0.3450 0.0380 -0.0460 0.1120  0.0150 -0.0710 -0.0670 -0.0100
0.1800
BI    0.0000 0.0000  0.3630 0.0710 0.12900.1310  0.1180 0.1510 -0.0070 0.0000 0.0000 0.0000  0.0000  0.0000 0.0000
ATT1  0.0000 0.0000 0.0000 0.0000  0.0000 0.0000  0.0000 0.0000  0.0000 0.3760-0.0290  0.0000  0.0000  0.0000
0.0000
ATT2   0.0000 0.0000  0.0000 0.0000  0.0000 0.0000 0.0000 0.0000  0.0000 0.2240  0.0950  0.0000  0.0000  0.0000
0.0000
SNORM  0.0000 0.0000  0.0000 0.0000  0.0000 0.0000  0.0000 0.0000  0.0000 0.0000  0.0000  0.0000  0.0000 0.0000
0.0000
OTHERS 0.0000 0.0000 0.0000 0.0000  0.0000 0.0000 0.0000 0.0000  0.0000 0.0000  0.0000  0.0000  0.0000  0.0000
0.0000
PBC    0.0000 0.0000  0.0000 0.0000 0.0000 0.0000  0.0000 0.0000  0.0000 0.0000  0.0000  0.0000  0.0000  0.0000
0.0000
TXSY   0.0000 0.0000  0.0000 0.0000 0.0000 0.0000  0.0000 0.0000  0.0000 0.0000  0.0000  0.0000 0.0000  0.0000
0.0000
TXAU   0.0000 0.0000  0.0000 0.0000  0.0000 0.0000  0.0000 0.0000  0.0000 0.0000  0.0000  0.0000 0.0000  0.0000
0.0000
CnP    0.0000 0.0000  0.0000 0.0000  0.0000 0.0000  0.0000 0.0000  0.0000 0.0000  0.0000 0.0000  0.0000 0.0000
0.0000
CnPeff 0.0000 0.0000 0.0000 0.0000  0.0000 0.0000  0.0000 0.0000 0.0000 0.0000  0.0000  0.0000  0.0000  0.0000
0.0000
DSTa   0.0000 0.0000  0.0000 0.0000 0.0000 0.0000  0.0000 0.0000  0.0000 0.0000  0.0000  0.0000  0.0000  0.0000
0.0000
DSTb   0.0000 0.0000  0.0000 0.0000  0.0000 0.0000  0.0000 0.0000 0.0000 0.0000  0.0000  0.0000  0.0000  0.0000
0.0000
DSTc   0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000  0.0000 0.0000  0.0000  0.0000  0.0000  0.0000
0.0000
DSTd   0.0000 0.0000  0.0000 0.0000  0.0000 0.0000 0.0000 0.0000 0.0000 0.0000  0.0000  0.0000  0.0000  0.0000
0.0000
========================================================================
Path Coefficients Table (Mean of Subsamples):
========================================================================
BEHp    BI    ATT1   ATT2 SNORM OTHERS  PBC    TXSY   TXAU  CnP   CnPeff  DSTa  DSTb   DSTc   DSTd
BEHp   0.0000 0.3221 0.0000 0.0000 0.0000 0.0000  0.3456 0.0521 -0.0370 0.1054  0.0342 -0.0483 -0.0639-0.0112
0.1720
BI     0.0000 0.0000  0.3689 0.0779  0.1323 0.1236  0.1091 0.1420  0.0124 0.0000  0.0000  0.0000  0.0000  0.0000
0.0000
ATT1   0.0000 0.0000  0.0000 0.0000  0.0000 0.0000  0.0000 0.0000  0.0000 0.3823 -0.0054  0.0000  0.0000  0.0000
0.0000
ATT2   0.0000 0.0000  0.0000 0.0000  0.0000 0.0000  0.0000 0.0000  0.0000 0.2318  0.1074  0.0000  0.0000  0.0000
0.0000
SNORM  0.0000 0.0000  0.0000 0.0000  0.0000 0.0000 0.0000 0.0000  0.0000 0.0000  0.0000  0.0000  0.0000  0.0000
0.0000
```

```
OTHERS 0.0000 0.0000  0.0000 0.0000  0.0000 0.0000  0.0000 0.0000  0.0000 0.0000  0.0000  0.0000  0.0000  0.0000
0.0000
PBC    0.0000 0.0000  0.0000 0.0000  0.0000 0.0000  0.0000 0.0000  0.0000 0.0000  0.0000  0.0000  0.0000  0.0000
0.0000
TXSY   0.0000 0.0000  0.0000 0.0000  0.0000 0.0000  0.0000 0.0000  0.0000 0.0000  0.0000  0.0000  0.0000  0.0000
0.0000
TXAU  0.0000 0.0000  0.0000 0.0000  0.0000 0.0000  0.0000 0.0000  0.0000 0.0000  0.0000  0.0000  0.0000  0.0000
0.0000
CnP    0.0000 0.0000  0.0000 0.0000  0.0000 0.0000  0.0000 0.0000  0.0000 0.0000  0.0000  0.0000  0.0000  0.0000
0.0000
CnPeff 0.0000 0.0000  0.0000 0.0000  0.0000 0.0000  0.0000 0.0000  0.0000 0.0000  0.0000  0.0000  0.0000 0.0000
0.0000
DSTa   0.0000 0.0000  0.0000 0.0000  0.0000 0.0000  0.0000 0.0000  0.0000 0.0000  0.0000  0.0000  0.0000  0.0000
0.0000
DSTb   0.0000 0.0000  0.0000 0.0000  0.0000 0.0000  0.0000 0.0000  0.00000.0000  0.0000  0.0000  0.0000  0.0000
0.0000
DSTc   0.0000 0.0000  0.0000 0.0000  0.0000 0.0000  0.0000 0.0000  0.0000 0.0000  0.0000  0.0000  0.0000  0.0000
0.0000
DSTd   0.0000 0.0000  0.0000 0.0000  0.0000 0.0000  0.0000 0.0000  0.0000 0.0000  0.0000 0.0000  0.0000  0.0000
0.0000
======================================================================
Path Coefficients Table (Standard Error):
======================================================================
         BEHp    BI   ATT1   ATT2   SNORM  OTHERS  PBC   TXSY  TXAU   CnP CnPeff  DSTa    DSTb    DSTc  DSTd
BEHp  0.0000 0.0850  0.0000 0.0000  0.0000 0.0000  0.0687 0.0691  0.0813 0.0945  0.0650 0.0843  0.0902  0.0856
0.0786
BI     0.0000 0.0000 0.0840 0.0713  0.0750 0.0639  0.0816 0.0829  0.0620 0.0000  0.0000  0.0000  0.0000  0.0000
0.0000
ATT1   0.0000 0.0000  0.0000 0.0000 0.0000 0.0000  0.0000 0.0000  0.0000 0.0701  0.0910  0.0000  0.0000  0.0000
0.0000
ATT2   0.0000 0.0000  0.0000 0.0000  0.0000 0.0000  0.0000 0.0000  0.0000 0.0704  0.0811  0.0000  0.0000 0.0000
0.0000
SNORM  0.0000 0.0000 0.0000 0.0000  0.0000 0.0000  0.0000 0.0000  0.0000 0.0000  0.0000  0.0000  0.0000  0.0000
0.0000
OTHERS 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000  0.0000 0.0000
PBC    0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.00000.0000 0.0000 0.0000 0.0000
TXSY   0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.00000.0000 0.0000 0.0000 0.00000.0000
TXAU   0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000
CnP    0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000
CnPeff 0.0000 0.00000.0000 0.0000 0.0000 0.00000.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.00000.0000
DSTa   0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000
DSTb   0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000
DSTc   0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.00000.0000 0.0000 0.0000 0.0000 0.0000
DSTd   0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000
======================================================================
Path Coefficients Table (T-Statistic)
======================================================================
         BEHp    BI    ATT1   ATT2  SNORM  OTHERS  PBC    TXSY   TXAU   CnP   CnPeff DSTa    DSTb   DSTc   DSTd
BEHp   0.0000 4.0117 0.0000 0.0000 0.0000 0.0000 5.0193 0.5495 0.5657 1.1858 0.2306 0.8418 0.7427 0.1168 2.2903
BI     0.0000 0.0000 4.3215 0.9963 1.7207 2.0499 1.4459 1.8223 0.1129 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000
ATT1   0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 5.3611 0.3186 0.0000 0.0000 0.0000 0.0000
ATT2   0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 3.1827 1.1708 0.0000 0.0000 0.0000 0.0000
SNORM  0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000
OTHERS 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000
PBC    0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000
TXSY   0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000
TXAU   0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000
CnP    0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000
CnPeff 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000
DSTa   0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000
DSTb   0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000
DSTc   0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000
DSTd   0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000
======================================================================
```

Appendix 8: PLS Bootstrap Output (Tax Agent Sample)

Output results with Construct Level sign change preprocessing:
Bootstrap raw data generated for Dr. Annette Mills
Number of cases in full model: 164
Number of cases per sample: 164
Number of samples generated: 1000
Number of good samples: 967
The following samples were not included in the calculations due to error detection:

130,137,157,161,218,219,232,260,308,345,353,373,422,474,532,548,555,572,597,608,651,711,779,787,810,823,827,852,853
,890,916,921,985
Outer Model Weights:

	Original sample estimate	Mean of subsamples	Standard error	T-Statistic
BEHca :				
BEH1	0.6105	0.5259	0.1907	3.2010
BEH2	0.5371	0.5915	0.1651	3.2523
BI :				
BI1	0.5048	0.5209	0.0541	9.3329
BI2	0.6731	0.6578	0.0511	13.1744
ATT1 :				
CIVIC	0.4099	0.4057	0.0476	8.6107
MORAL	0.6240	0.6197	0.0522	11.9618
GUILT	0.2891	0.2955	0.0711	4.0669
ATT2 :				
CODet	0.6104	0.5642	0.1738	3.5125
COPun	0.3388	0.3195	0.1833	1.8486
SOPun	0.3264	0.3474	0.1860	1.7548
SNORM :				
SNORM1	0.3892	0.3700	0.0991	3.9283
SNORM2	0.3411	0.3438	0.0721	4.7295
SNORM3	0.5168	0.5230	0.0867	5.9595
PBC :				
PBC1	0.7846	0.7223	0.2174	3.6085
PBC2	-0.0460	-0.0219	0.2328	0.1976
PBC3	0.3796	0.3795	0.1475	2.5730
OTHERS :				
OTH1	0.3393	0.3354	0.1407	2.4123
OTH3	0.1425	0.1133	0.1764	0.8077
OTH4	0.3094	0.2922	0.1310	2.3627
OTH5	0.5569	0.5537	0.1018	5.4727
TXSY :				
TXSY2	-0.5021	-0.4872	0.3040	1.6514
TXSY4	0.7724	0.7093	0.2347	3.2904
TXAU :				
TXAU1	0.1631	0.1598	0.1389	1.1740
TXAU2	0.2818	0.2566	0.1300	2.1676
TXAU3	0.5153	0.4996	0.1395	3.6939
TXAU4	0.2231	0.2154	0.1138	1.9601
TXAU5	0.1842	0.1652	0.1446	1.2740
TXAU6	0.0846	0.0830	0.1105	0.7659
CnP :				
CnP1	0.2793	0.2810	0.1265	2.2084
CnP2	0.3380	0.3132	0.1235	2.7359
CnP3	0.3438	0.3069	0.1586	2.1680
CnP4	0.2302	0.2240	0.1277	1.8025
CnP6	0.1386	0.1497	0.1574	0.8803
CnPeff :				
CnPeff1	0.1932	0.1787	0.2339	0.8260
CnPeff2	0.4309	0.4401	0.1020	4.2244
CnPeff3	0.5853	0.5448	0.1151	5.0850
DSTa :				
DST6	0.7689	0.5346	0.4924	1.5615
DST7	0.3854	0.4472	0.4686	0.8225
DSTb :				
DST12	0.9890	0.6376	0.5300	1.8660
DST13	0.0184	0.3126	0.5278	0.0349
DSTc :				
DST5	0.5117	0.4197	0.3615	1.4155
DST8	0.6476	0.6548	0.3026	2.1402
DSTd :				
DST10	0.3808	0.4085	0.2252	1.6912
DST11	0.8224	0.7490	0.2625	3.1327

Outer Model Loadings:

	Original sample estimate	Mean of subsamples	Standard error	T-Statistic
BEHca :				
(Composite Reliability = 0.862 , AVE = 0.758)				
BEH1	0.8880	0.8155	0.2377	3.7353
BEH2	0.8525	0.8777	0.1354	6.2967
BI :				
(Composite Reliability = 0.831 , AVE = 0.712)				
BI1	0.7942	0.8023	0.0453	17.5427
BI2	0.8901	0.8810	0.0312	28.4916
ATT1 :				
(Composite Reliability = 0.762 , AVE = 0.527)				
CIVIC	0.7227	0.7122	0.0599	12.0710
MORAL	0.8863	0.8827	0.0219	40.4205
GUILT	0.5216	0.5263	0.1070	4.8765
ATT2 :				
(Composite Reliability = 0.801 , AVE = 0.580)				
CODet	0.9037	0.8687	0.1148	7.8716

```
    COPun           0.5990      0.5787      0.1619      3.6989
    SOPun           0.7518      0.7449      0.1361      5.5259
SNORM   :
(Composite Reliability =      0.839 , AVE =      0.635 )
    SNORM1          0.7694      0.7558      0.0731     10.5229
    SNORM2          0.7774      0.7729      0.0653     11.9056
    SNORM3          0.8424      0.8471      0.0435     19.3789
PBC     :
(Composite Reliability =      0.781 , AVE =      0.559 )
    PBC1            0.9495      0.9003      0.1520      6.2452
    PBC2            0.4899      0.4585      0.2484      1.9720
    PBC3            0.7310      0.7069      0.1673      4.3691
OTHERS  :
(Composite Reliability =      0.781 , AVE =      0.485 )
    OTH1            0.6267      0.6019      0.1450      4.3209
    OTH3            0.4533      0.4220      0.1879      2.4125
    OTH4            0.7566      0.7220      0.1142      6.6236
    OTH5            0.8774      0.8539      0.0617     14.2293
TXSY    :
(Composite Reliability =      0.740 , AVE =      0.592 )
TXSY2          -0.6527     -0.6202      0.2843      2.2959
    TXSY4           0.8703      0.8101      0.1787      4.8701
TXAU    :
(Composite Reliability =      0.814 , AVE =      0.427 )
    TXAU1           0.4787      0.4546      0.1684      2.8428
    TXAU2           0.6738      0.6257      0.1709      3.9430
    TXAU3           0.8117      0.7820      0.1013      8.0122
    TXAU4           0.6037      0.5767      0.1338      4.5126
    TXAU5           0.6885      0.6400      0.1722      3.9974
TXAU6           0.6182      0.5798      0.1449      4.2651
CnP     :
(Composite Reliability =      0.861 , AVE =      0.555 )
    CnP1            0.7350      0.7171      0.1204      6.1071
    CnP2            0.7699      0.7447      0.1202      6.4065
    CnP3            0.7534      0.7091      0.1727      4.3622
    CnP4            0.7997      0.7573      0.1478      5.4120
    CnP6            0.6589      0.6466      0.1384      4.7618
CnPeff  :
(Composite Reliability =      0.824 , AVE =      0.617 )
    CnPeff1         0.5733      0.5410      0.2340      2.4496
    CnPeff2         0.8499      0.8369      0.0820     10.3662
    CnPeff3         0.8937      0.8626      0.0929      9.6180
DSTa    :
(Composite Reliability =      0.822 , AVE =      0.701 )
    DST6            0.9381      0.7359      0.3549      2.6432
    DST7            0.7231      0.6859      0.3306      2.1873
DSTb    :
(Composite Reliability =      0.803 , AVE =      0.684 )
    DST12           0.9999      0.8235      0.2852      3.5054
    DST13           0.6064      0.6952      0.2798      2.1676
DSTc    :
(Composite Reliability =      0.849 , AVE =      0.738 )
    DST5            0.8231      0.7301      0.2549      3.2296
    DST8            0.8937      0.8575      0.1742      5.1297
DSTd    :
(Composite Reliability =      0.760 , AVE =      0.623 )
    DST10           0.6153      0.6260      0.1826      3.3700
    DST11           0.9310      0.8653      0.2267      4.1063
=====================================================================
Path Coefficients Table (Original Sample Estimate):
=====================================================================
 BEHca  BI     ATT1  ATT2  SNORM  PBC  OTHERS   TXSY   TXAU   CnP   CnPeff   DSTa  DSTb DSTc DSTd
BEHca  0.0000 0.2870 0.0000 0.0000 0.0000 0.1850 0.0000-0.0700 0.1330 0.1800 -0.0350 -0.0570 -0.1300 -0.1860 0.1130
BI     0.0000 0.0000 0.5210-0.0380 0.1240 0.0480 0.1390 0.0220 0.1440 0.0000  0.0000  0.0000 0.0000  0.0000 0.0000
ATT1   0.0000 0.0000 0.0000 0.00000.0000 0.0000 0.0000  0.0000 0.0000 0.2100-0.1620  0.0000  0.0000  0.0000 0.0000
ATT2   0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000  0.0000 0.0000-0.0580  0.2560  0.0000 0.0000  0.0000 0.0000
SNORM  0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000  0.0000 0.0000 0.0000  0.0000  0.0000  0.0000  0.0000
0.0000
PBC    0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000  0.0000 0.0000 0.0000  0.0000  0.0000 0.0000 0.0000 0.0000
OTHERS 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000  0.0000 0.0000 0.0000  0.0000  0.0000  0.0000  0.0000
0.0000
TXSY   0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000  0.0000 0.0000 0.0000  0.0000  0.0000  0.0000  0.0000
0.0000
TXAU   0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000  0.0000  0.0000  0.0000 0.0000 0.0000
CnP    0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000  0.0000 0.0000 0.0000  0.0000  0.0000  0.0000  0.0000
0.0000
CnPeff0.0000 0.00000.0000 0.0000 0.0000 0.0000 0.0000  0.0000 0.0000 0.0000  0.0000  0.0000  0.0000  0.0000 0.0000
DSTa   0.0000 0.0000 0.0000 0.0000 0.0000 0.00000.0000  0.0000 0.0000 0.0000  0.0000  0.0000  0.0000  0.0000 0.0000
DSTb   0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000  0.0000  0.0000  0.0000  0.0000 0.0000
DSTc   0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000  0.0000 0.0000 0.0000  0.0000  0.0000  0.0000  0.0000 0.0000
DSTd   0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000  0.0000  0.0000  0.0000 0.0000
=====================================================================



---------------------------------------------------------------------
Path Coefficients Table (Mean of Subsamples):
=====================================================================

   BEHca  BI     ATT1  ATT2  SNORM  PBC  OTHERS TXSY   TXAU   CnP   CnPeff   DSTa   DSTb  DSTc  DSTd
BEHca  0.0000 0.2751 0.0000 0.0000 0.0000 0.1926 0.0000-0.0973 0.1226 0.1409 -0.0286 -0.0478-0.0748-0.1829 0.1063
BI     0.0000 0.0000 0.5078-0.03480.1363 0.0449 0.1410 0.0275 0.1490 0.0000 0.0000 0.0000  0.0000  0.0000 0.0000
ATT1   0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000  0.0000 0.0000 0.2372 -0.1725 0.0000 0.0000  0.0000 0.0000
ATT2   0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000-0.0503 0.2625  0.0000  0.0000  0.0000 0.0000
SNORM  0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000  0.0000 0.0000 0.0000  0.0000  0.0000  0.0000  0.0000
0.0000
PBC    0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000  0.0000 0.0000 0.0000  0.0000  0.0000  0.0000  0.0000
0.0000
OTHERS 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000  0.0000  0.0000  0.0000  0.0000 0.0000
TXSY   0.0000 0.0000 0.00000.0000 0.0000 0.0000 0.0000  0.0000 0.0000 0.0000 0.0000  0.0000  0.0000  0.0000 0.0000
TXAU   0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000  0.0000  0.0000 0.0000  0.0000 0.0000
CnP    0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000  0.0000 0.0000 0.0000  0.0000 0.0000 0.0000  0.0000 0.0000
```

```
CnPeff 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000  0.0000  0.0000  0.0000  0.0000 0.0000
DSTa   0.00000.0000 0.0000 0.0000 0.0000 0.0000 0.0000  0.0000 0.0000 0.0000 0.0000  0.0000  0.0000  0.0000 0.0000
DSTb   0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000  0.0000  0.0000  0.0000  0.0000 0.0000
DSTc   0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000  0.0000 0.0000 0.0000  0.0000  0.0000 0.0000  0.0000 0.0000
DSTd   0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000  0.0000 0.0000 0.0000  0.0000  0.0000  0.0000  0.0000
0.0000
======================================================================
Path Coefficients Table (Standard Error):
======================================================================
          BEHca  BI    ATT1  ATT2  SNORM PBC   OTHERS  TXSY   TXAU   CnP   CnPeff DSTa    DSTb    DSTc   DSTd
BEHca  0.0000 0.1077 0.0000 0.00000.00000.1666 0.0000  0.0994 0.0762 0.1054  0.1150  0.0954  0.1164  0.1152 0.0753
BI     0.0000 0.0000 0.0767 0.0786 0.0719 0.0909 0.0581  0.0644 0.0710 0.0000 0.0000  0.0000  0.0000  0.0000 0.0000
ATT1   0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0768  0.0837 0.0000  0.0000  0.0000 0.0000
ATT2   0.0000 0.0000 0.0000 0.00000.0000 0.0000 0.0000 0.0000 0.0000 0.0961  0.1018  0.0000  0.0000  0.0000 0.0000
SNORM 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000  0.0000  0.0000  0.0000  0.0000 0.0000
PBC    0.0000 0.0000 0.0000 0.0000 0.00000.0000 0.0000 0.0000 0.0000 0.0000  0.0000  0.0000 0.0000  0.0000 0.0000
OTHERS 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000  0.0000  0.0000  0.0000  0.0000 0.0000
TXSY   0.0000 0.0000 0.00000.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000  0.0000  0.0000  0.0000  0.0000 0.0000
TXAU   0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000  0.0000  0.0000  0.0000 0.0000 0.0000
CnP    0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000  0.0000 0.0000 0.0000  0.0000  0.0000  0.0000  0.0000
0.0000
CnPeff 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000  0.0000 0.0000 0.0000  0.0000  0.0000  0.0000  0.0000
0.0000
DSTa   0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000  0.0000 0.0000
DSTb   0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000  0.0000  0.0000  0.0000 0.0000 0.0000
DSTc   0.0000 0.0000 0.0000 0.0000 0.00000.0000 0.0000  0.0000 0.0000 0.0000  0.0000  0.0000 0.0000  0.0000 0.0000
DSTd   0.0000 0.0000 0.00000.0000 0.0000 0.0000 0.0000  0.0000 0.0000 0.0000  0.0000  0.0000  0.0000  0.0000 0.0000
======================================================================
Path Coefficients Table (T-Statistic)
======================================================================
         BEHca  BI ATT1  ATT2 SNORM PBC  OTHERS TXSY  TXAU  CnP  CnPeff DSTa  DSTb   DSTc    DSTd
BEHca 0.00002.6652 0.0000 0.00000.0000 1.1107 0.0000 0.7045 1.7446 1.7082 0.3045 0.5973 1.1172 1.61391.5010
BI     0.0000 0.0000 6.7932 0.4833 1.7251 0.5282 2.3934  0.3418 2.0271 0.0000 0.0000 0.0000  0.0000  0.0000 0.0000
ATT1   0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000  0.0000 0.00002.7352 1.9359 0.0000  0.0000  0.0000 0.0000
ATT2   0.0000 0.00000.0000 0.0000 0.0000 0.0000 0.0000  0.0000 0.0000 0.6038 2.5147 0.0000  0.0000 0.0000 0.0000
SNORM  0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000  0.00000.0000 0.0000 0.0000 0.0000  0.0000 0.0000 0.0000
PBC    0.0000 0.0000 0.00000.0000 0.0000 0.0000 0.0000  0.0000 0.0000 0.0000 0.0000 0.0000  0.0000  0.0000 0.0000
OTHERS 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000  0.0000 0.0000 0.0000 0.0000 0.0000  0.0000  0.0000 0.0000
TXSY   0.0000 0.0000 0.0000 0.0000 0.0000 0.00000.0000  0.00000.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000
TXAU   0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000  0.0000 0.0000 0.0000 0.0000 0.0000  0.0000  0.0000 0.0000
CnP    0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000  0.0000 0.0000 0.0000 0.0000 0.0000  0.0000 0.0000 0.0000
CnPeff 0.0000 0.00000.0000 0.00000.0000 0.0000 0.0000  0.0000 0.0000 0.0000  0.0000  0.0000  0.0000  0.0000 0.0000
DSTa   0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000  0.0000  0.0000  0.0000 0.0000 0.0000
DSTb  0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000  0.0000  0.0000  0.0000 0.0000 0.0000
DSTc   0.0000 0.0000 0.00000.0000 0.0000 0.0000 0.0000  0.0000 0.0000 0.0000  0.0000  0.0000 0.0000  0.0000 0.0000
DSTd   0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000  0.0000 0.0000 0.0000  0.0000  0.0000  0.0000  0.0000
0.0000
======================================================================
```

Appendix 9: PLS Deck Output (Taxpayer Sample)

```
P   L   S   G R A P H for Partial Least Squares Analysis
            (2004 Feb 27)

YEAR-MONTH-DAY: 2011-08-09
HOUR:MIN:SECS: 23:38:28.
PLS Deck generated for Dr. Annette Mills
====================================
--      P    L    S    X          --
-- LATENT VARIABLES PATH ANALYSIS --
- PARTIAL LEAST-SQUARES ESTIMATION -
====================================
Number of Blocks       NBLOCS =   15
Number of Cases        NCASES =  180
Number of Dimensions     NDIM =    1
Output Quantity           OUT = 2256
Inner Weighting Scheme  IWGHT =    1
Number of Iterations    NITER =  100
Estimation Accuracy       EPS =    5
Analysed Data Metric   METRIC =    1
====================================
 Block   N-MV Deflate LV-Mode   Model
------------------------------------
 BEHVp      2   yes   outward Endogen
 BI         2   yes   outward Endogen
 ATT1       3   yes   outward Endogen
 ATT2       3   yes   outward Endogen
 SNORM      3   yes   outward  Exogen
 OTHERS     4   yes   outward  Exogen
 PBC        3   yes   outward  Exogen
 TXSY       2   yes   outward  Exogen
 TXAU       6   yes   outward  Exogen
 CnP        5   yes   outward  Exogen
 CnPeff     3   yes   outward  Exogen
 DSTa       2   yes   outward  Exogen
 DSTb       2   yes   outward  Exogen
 DSTc       2   yes   outward  Exogen
 DSTd       2   yes   outward  Exogen
 ------------------------------------
          44              .
 ====================================
Real words needed   16540 from 600000
Char words needed     479 from  40000
Dimension No.  1
Partial Least-Squares Parameter Estimation
Change of Stop Criteria during Iteration
Cycle No.    CR1         CR2         CR3         CR4         CR5

1  0.9027E+00  0.6934E-01  0.3366E+00  0.3076E+00  0.4657E+00
    2  0.1143E-01  0.6000E-02 -0.1808E-03 -0.1766E-03 -0.1754E-03
    3  0.7006E-02  0.2395E-04  0.3432E-04  0.4093E-04 -0.5044E-04
4  0.3165E-03  0.4986E-04 -0.3747E-06 -0.2168E-06 -0.8175E-05
    5  0.4365E-03  0.2777E-06  0.1909E-05  0.1347E-05  0.1473E-05
    6  0.2497E-04  0.2699E-05  0.5720E-07  0.2765E-07  0.7472E-07
    7  0.2539E-04  0.1446E-06  0.1070E-06  0.7154E-07  0.8949E-07
8  0.2039E-05  0.1507E-06  0.5835E-08  0.3519E-08  0.6367E-08
0Convergence at Iteration Cycle No.   8

0B  .. Path coefficients
 ================================================================================
             BEHVp     BI        ATT1      ATT2      SNORM     OTHERS    PBC
 --------------------------------------------------------------------------------
 BEHVp          0.000     0.341     0.000     0.000     0.000     0.000     0.345
 BI             0.000     0.000     0.363     0.071     0.129     0.131     0.118
 ATT1           0.000     0.000     0.000     0.000     0.000     0.000     0.000
 ATT2           0.000     0.000     0.000     0.000     0.000     0.000     0.000
 SNORM          0.000     0.000     0.000     0.000     0.000     0.000     0.000
 OTHERS         0.000     0.000     0.000     0.000     0.000     0.000     0.000
 PBC            0.000     0.000     0.000     0.000     0.000     0.000     0.000
 TXSY           0.000     0.000     0.000     0.000     0.000     0.000     0.000
 TXAU           0.000     0.000     0.000     0.000     0.000     0.000     0.000
 CnP            0.000     0.000     0.000     0.000     0.000     0.000     0.000
 CnPeff         0.000     0.000     0.000     0.000     0.000     0.000     0.000
```

DSTa	0.000	0.000	0.000	0.000	0.000	0.000	0.000
DSTb	0.000	0.000	0.000	0.000	0.000	0.000	0.000
DSTc	0.000	0.000	0.000	0.000	0.000	0.000	0.000
DSTd	0.000	0.000	0.000	0.000	0.000	0.000	0.000

0B .. Path coefficients

	TXSY	TXAU	CnP	CnPeff	DSTa	DSTb	DSTc
BEHVp	0.038	-0.046	0.112	0.015	-0.071	-0.067	-0.010
BI	0.151	-0.007	0.000	0.000	0.000	0.000	0.000
ATT1	0.000	0.000	0.376	-0.029	0.000	0.000	0.000
ATT2	0.000	0.000	0.224	0.095	0.000	0.000	0.000
SNORM	0.000	0.000	0.000	0.000	0.000	0.000	0.000
OTHERS	0.000	0.000	0.000	0.000	0.000	0.000	0.000
PBC	0.000	0.000	0.000	0.000	0.000	0.000	0.000
TXSY	0.000	0.000	0.000	0.000	0.000	0.000	0.000
TXAU	0.000	0.000	0.000	0.000	0.000	0.000	0.000
CnP	0.000	0.000	0.000	0.000	0.000	0.000	0.000
CnPeff	0.000	0.000	0.000	0.000	0.000	0.000	0.000
DSTa	0.000	0.000	0.000	0.000	0.000	0.000	0.000
DSTb	0.000	0.000	0.000	0.000	0.000	0.000	0.000
DSTc	0.000	0.000	0.000	0.000	0.000	0.000	0.000
DSTd	0.000	0.000	0.000	0.000	0.000	0.000	0.000

0B .. Path coefficients

	DSTd
BEHVp	0.180
BI	0.000
ATT1	0.000
ATT2	0.000
SNORM	0.000
OTHERS	0.000
PBC	0.000
TXSY	0.000
TXAU	0.000
CnP	0.000
CnPeff	0.000
DSTa	0.000
DSTb	0.000
DSTc	0.000
DSTd	0.000

0R .. Correlations of latent variables

	BEHVp	BI	ATT1	ATT2	SNORM	OTHERS	PBC
BEHVp	1.000						
BI	0.558	1.000					
ATT1	0.473	0.604	1.000				
ATT2	0.401	0.346	0.319	1.000			
SNORM	0.407	0.518	0.596	0.308	1.000		
OTHERS	0.263	0.411	0.371	0.323	0.330	1.000	
PBC	0.532	0.460	0.455	0.424	0.477	0.324	1.000
TXSY	0.301	0.380	0.273	0.186	0.350	0.298	0.299
TXAU	0.182	0.285	0.339	0.077	0.245	0.440	0.235
CnP	0.326	0.305	0.368	0.251	0.251	0.435	0.296
CnPeff	0.249	0.285	0.078	0.159	0.245	-0.023	0.276
DSTa	0.214	0.327	0.419	0.224	0.213	0.210	0.308
DSTb	0.192	0.323	0.346	0.056	0.192	0.334	0.222
DSTc	0.190	0.254	0.340	0.075	0.201	0.279	0.115
DSTd	0.347	0.361	0.475	0.153	0.281	0.246	0.166

0R .. Correlations of latent variables

	TXSY	TXAU	CnP	CnPeff	DSTa	DSTb	DSTc
TXSY	1.000						
TXAU	0.313	1.000					
CnP	0.245	0.524	1.000				
CnPeff	0.033	-0.004	0.285	1.000			
DSTa	0.111	0.365	0.306	0.193	1.000		
DSTb	0.281	0.669	0.520	0.017	0.478	1.000	
DSTc	0.144	0.368	0.549	0.189	0.348	0.541	1.000
DSTd	0.244	0.292	0.446	0.138	0.430	0.401	0.452

0R .. Correlations of latent variables

	DSTd
DSTd	1.000

0Inner Model

Block	Mean	Location	Mult.RSq	AvResVar	AvCommun	AvRedund
BEHVp	0.0000	0.0000	0.4499	0.1053	0.8947	0.4025
BI	0.0000	0.0000	0.4742	0.3508	0.6492	0.3079
ATT1	0.0000	0.0000	0.1359	0.3374	0.6626	0.0901
ATT2	0.0000	0.0000	0.0712	0.3931	0.6069	0.0432
SNORM	0.0000	0.0000	0.0000	0.3776	0.6224	0.0000
OTHERS	0.0000	0.0000	0.0000	0.4884	0.5116	0.0000
PBC	0.0000	0.0000	0.0000	0.2416	0.7584	0.0000
TXSY	0.0000	0.0000	0.0000	0.5428	0.4572	0.0000
TXAU	0.0000	0.0000	0.0000	0.3883	0.6117	0.0000
CnP	0.0000	0.0000	0.0000	0.4485	0.5515	0.0000
CnPeff	0.0000	0.0000	0.0000	0.4679	0.5321	0.0000
DSTa	0.0000	0.0000	0.0000	0.3125	0.6875	0.0000
DSTb	0.0000	0.0000	0.0000	0.1741	0.8259	0.0000
DSTc	0.0000	0.0000	0.0000	0.2509	0.7491	0.0000
DSTd	0.0000	0.0000	0.0000	0.3813	0.6187	0.0000
Average			0.0754	0.3685	0.6315	0.0414

0Outer Model

Variable	Weight	Loading	Location	ResidVar	Communal	Redundan
BEHVp	outward					
BEH1	0.5195	0.9440	0.0000	0.1089	0.8911	0.4009
BEH2	0.5376	0.9478	0.0000	0.1017	0.8983	0.4041
BI	outward					
BI1	0.4691	0.7048	0.0000	0.5033	0.4967	0.2356
BI2	0.7475	0.8954	0.0000	0.1982	0.8018	0.3802
ATT1	outward					
CIVIC	0.4119	0.8291	0.0000	0.3126	0.6874	0.0934
GUILT	0.4396	0.7888	0.0000	0.3778	0.6222	0.0846
MORAL	0.3784	0.8236	0.0000	0.3217	0.6783	0.0922
ATT2	outward					
COPun	0.1064	0.5127	0.0000	0.7371	0.2629	0.0187
SOPun	0.5417	0.8828	0.0000	0.2206	0.7794	0.0555
CODet	0.5296	0.8822	0.0000	0.2217	0.7783	0.0554
SNORM	outward					
SNORM1	0.5046	0.8826	0.0000	0.2210	0.7790	0.0000
SNORM2	0.4136	0.8009	0.0000	0.3586	0.6414	0.0000
SNORM3	0.3342	0.6684	0.0000	0.5532	0.4468	0.0000
OTHERS	outward					
OTH1	0.4344	0.8319	0.0000	0.3080	0.6920	0.0000
OTH3	0.3065	0.6452	0.0000	0.5837	0.4163	0.0000
OTH4	0.3112	0.6759	0.0000	0.5431	0.4569	0.0000
OTH5	0.3324	0.6937	0.0000	0.5188	0.4812	0.0000
PBC	outward					
PBC1	0.4782	0.9296	0.0000	0.1358	0.8642	0.0000
PBC2	0.2754	0.8353	0.0000	0.3023	0.6977	0.0000
PBC3	0.3852	0.8446	0.0000	0.2866	0.7134	0.0000
TXSY	outward					
TXSY2	0.8399	0.7836	0.0000	0.3860	0.6140	0.0000
TXSY4	0.6238	0.5480	0.0000	0.6997	0.3003	0.0000
TXAU	outward					
TXAU2	0.2927	0.8574	0.0000	0.2649	0.7351	0.0000
TXAU3	0.1986	0.7830	0.0000	0.3869	0.6131	0.0000
TXAU4	0.1947	0.7192	0.0000	0.4828	0.5172	0.0000
TXAU5	0.2165	0.8584	0.0000	0.2631	0.7369	0.0000

```
 TXAU6          0.1468    0.7858    0.0000    0.3826    0.6174    0.0000
 TXAU1          0.2268    0.6712    0.0000    0.5494    0.4506    0.0000
 ------------------------------------------------------------------------
    CnP        outward
 CnP1           0.1600    0.6556    0.0000    0.5702    0.4298    0.0000
 CnP2           0.3051    0.7034    0.0000    0.5052    0.4948    0.0000
 CnP3           0.2908    0.8261    0.0000    0.3176    0.6824    0.0000
 CnP4           0.3654    0.8596    0.0000    0.2610    0.7390    0.0000
 CnP6           0.1966    0.6417    0.0000    0.5883    0.4117    0.0000
 ------------------------------------------------------------------------
    CnPeff     outward
 CnPeff1        0.2308    0.4997    0.0000    0.7503    0.2497    0.0000
 CnPeff2        0.6826    0.9267    0.0000    0.1413    0.8587    0.0000
 CnPeff3        0.3608    0.6986    0.0000    0.5120    0.4880    0.0000
 ------------------------------------------------------------------------
    DSTa       outward
 DST6           0.4493    0.7385    0.0000    0.4546    0.5454    0.0000
 DST7           0.7337    0.9108    0.0000    0.1705    0.8295    0.0000
 ------------------------------------------------------------------------
    DSTb       outward
 DST12          0.5509    0.9091    0.0000    0.1736    0.8264    0.0000
 DST13          0.5495    0.9086    0.0000    0.1745    0.8255    0.0000
 ------------------------------------------------------------------------
    DSTc       outward
 DST5           0.5511    0.8522    0.0000    0.2737    0.7263    0.0000
 DST8           0.6037    0.8786    0.0000    0.2281    0.7719    0.0000
 ------------------------------------------------------------------------
    DSTd       outward
 DST10          0.4621    0.6611    0.0000    0.5630    0.4370    0.0000
 DST11          0.7762    0.8947    0.0000    0.1995    0.8005    0.0000
========================================
        ==PLSW no prob, eh?
CPU-Time =    0 min  0.04 sec
Total =       0 min  0.04 sec

       No errors reported.
```

Appendix 10: PLS Deck Output (Tax Agent Sample)

```
    P   L   S   G R A P H for Partial Least Squares Analysis

            (2004 Feb 27)

YEAR-MONTH-DAY: 2011-08-03
HOUR:MIN:SECS: 23:14:52.
PLS Deck generated for Dr. Annette Mills

 ====================================
--      P    L    S    X           --
-- LATENT VARIABLES PATH ANALYSIS --
 - PARTIAL LEAST-SQUARES ESTIMATION -
====================================
Number of Blocks       NBLOCS =   15
Number of Cases        NCASES =  164
Number of Dimensions     NDIM =    1
Output Quantity           OUT = 2255
Inner Weighting Scheme  IWGHT =    1
Number of Iterations    NITER =  100
Estimation Accuracy       EPS =    5
Analysed Data Metric   METRIC =    1
====================================
 Block   N-MV Deflate LV-Mode   Model
------------------------------------
 BEHVca     2   yes   outward Endogen
 BI         2   yes   outward Endogen
 ATT1       3   yes   outward Endogen
 ATT2       3   yes   outward Endogen
 SNORM      3   yes   outward  Exogen
 OTHERS     4   yes   outward  Exogen
 PBC        3   yes   outward  Exogen
 TXSY       2   yes   outward  Exogen
 TXAU       6   yes   outward  Exogen
 CnP        5   yes   outward  Exogen
 CnPeff     3   yes   outward  Exogen
 DSTa       2   yes   outward  Exogen
 DSTb       2   yes   outward  Exogen
 DSTc       2   yes   outward  Exogen
 DSTd       2   yes   outward  Exogen
 ------------------------------------
          44               .
 ====================================
Real words needed   15340 from 600000
Char words needed     447 from  40000
Dimension No.  1
Partial Least-Squares Parameter Estimation
Change of Stop Criteria during Iteration
Cycle No.    CR1         CR2         CR3         CR4         CR5

1  0.1106E+01  0.4855E-01  0.2202E+00  0.1818E+00  0.4671E+00
    2  0.3578E+00  0.6334E-02  0.1675E-02  0.1408E-02  0.9435E-04
    3  0.3341E-01  0.3983E-03 -0.3426E-04 -0.1178E-03  0.9912E-04
    4  0.5207E-02  0.5816E-04 -0.1018E-03 -0.1077E-03 -0.2769E-04
    5  0.1245E-02 -0.1048E-04 -0.2755E-04 -0.2786E-04 -0.4360E-05
    6  0.7168E-03 -0.2880E-05 -0.1474E-04 -0.1449E-04 -0.3780E-05
    7  0.1976E-03 -0.2137E-05 -0.4300E-05 -0.4191E-05 -0.1060E-05
    8  0.9284E-04 -0.6057E-06 -0.1934E-05 -0.1886E-05 -0.5199E-06
    9  0.2881E-04 -0.2931E-06 -0.6192E-06 -0.6012E-06 -0.1664E-06
   10  0.1223E-04 -0.9177E-07 -0.2563E-06 -0.2493E-06 -0.7074E-07
11  0.4080E-05 -0.3911E-07 -0.8706E-07 -0.8450E-07 -0.2405E-07
Convergence at Iteration Cycle No.  11



0B  .. Path coefficients
 ================================================================================
             BEHVca    BI        ATT1      ATT2      SNORM     OTHERS    PBC
 --------------------------------------------------------------------------------
 BEHVca         0.000     0.287     0.000     0.000     0.000     0.000     0.185
 BI             0.000     0.000     0.521    -0.038     0.124     0.139     0.048
 ATT1           0.000     0.000     0.000     0.000     0.000     0.000     0.000
 ATT2           0.000     0.000     0.000     0.000     0.000     0.000     0.000
```

SNORM	0.000	0.000	0.000	0.000	0.000	0.000	0.000
OTHERS	0.000	0.000	0.000	0.000	0.000	0.000	0.000
PBC	0.000	0.000	0.000	0.000	0.000	0.000	0.000
TXSY	0.000	0.000	0.000	0.000	0.000	0.000	0.000
TXAU	0.000	0.000	0.000	0.000	0.000	0.000	0.000
CnP	0.000	0.000	0.000	0.000	0.000	0.000	0.000
CnPeff	0.000	0.000	0.000	0.000	0.000	0.000	0.000
DSTa	0.000	0.000	0.000	0.000	0.000	0.000	0.000
DSTb	0.000	0.000	0.000	0.000	0.000	0.000	0.000
DSTc	0.000	0.000	0.000	0.000	0.000	0.000	0.000
DSTd	0.000	0.000	0.000	0.000	0.000	0.000	0.000

0B .. Path coefficients

	TXSY	TXAU	CnP	CnPeff	DSTa	DSTb	DSTc
BEHVca	-0.070	0.133	0.180	-0.035	-0.057	-0.130	-0.186
BI	0.022	0.144	0.000	0.000	0.000	0.000	0.000
ATT1	0.000	0.000	0.210	-0.162	0.000	0.000	0.000
ATT2	0.000	0.000	-0.058	0.256	0.000	0.000	0.000
SNORM	0.000	0.000	0.000	0.000	0.000	0.000	0.000
OTHERS	0.000	0.000	0.000	0.000	0.000	0.000	0.000
PBC	0.000	0.000	0.000	0.000	0.000	0.000	0.000
TXSY	0.000	0.000	0.000	0.000	0.000	0.000	0.000
TXAU	0.000	0.000	0.000	0.000	0.000	0.000	0.000
CnP	0.000	0.000	0.000	0.000	0.000	0.000	0.000
CnPeff	0.000	0.000	0.000	0.000	0.000	0.000	0.000
DSTa	0.000	0.000	0.000	0.000	0.000	0.000	0.000
DSTb	0.000	0.000	0.000	0.000	0.000	0.000	0.000
DSTc	0.000	0.000	0.000	0.000	0.000	0.000	0.000
DSTd	0.000	0.000	0.000	0.000	0.000	0.000	0.000

0B .. Path coefficients

	DSTd
BEHVca	0.113
BI	0.000
ATT1	0.000
ATT2	0.000
SNORM	0.000
OTHERS	0.000
PBC	0.000
TXSY	0.000
TXAU	0.000
CnP	0.000
CnPeff	0.000
DSTa	0.000
DSTb	0.000
DSTc	0.000
DSTd	0.000

0R .. Correlations of latent variables

	BEHVca	BI	ATT1	ATT2	SNORM	OTHERS	PBC
BEHVca	1.000						
BI	0.367	1.000					
ATT1	0.381	0.617	1.000				
ATT2	0.153	0.093	0.152	1.000			
SNORM	0.088	0.324	0.262	0.278	1.000		
OTHERS	0.070	0.270	0.177	0.200	0.323	1.000	
PBC	0.313	0.279	0.295	0.296	0.351	0.240	1.000
TXSY	0.046	0.187	0.206	-0.016	0.051	0.045	0.007
TXAU	0.151	0.260	0.181	-0.164	0.080	-0.039	0.081
CnP	0.149	0.140	0.179	-0.009	0.184	0.044	0.082
CnPeff	-0.039	-0.014	-0.122	0.245	0.132	0.111	-0.110
DSTa	0.094	0.315	0.229	0.130	0.127	0.114	0.252
DSTb	-0.104	0.087	0.074	-0.180	0.069	0.012	-0.061
DSTc	-0.091	0.166	0.113	-0.137	0.097	0.035	-0.048
DSTd	0.224	0.360	0.510	0.038	0.298	0.220	0.144

0R .. Correlations of latent variables

TXSY	TXAU	CnP	CnPeff	DSTa	DSTb	DSTc
TXSY	1.000						

TXAU	0.308	1.000					
CnP	0.250	0.326	1.000				
CnPeff	-0.075	-0.278	0.191	1.000			
DSTa	0.103	0.276	0.227	-0.034	1.000		
DSTb	0.211	0.368	0.378	-0.087	0.206	1.000	
DSTc	0.089	0.358	0.437	-0.020	0.256	0.577	1.000
DSTd	0.190	0.097	0.334	0.005	0.153	0.225	0.221

0R .. Correlations of latent variables

DSTd	
DSTd	1.000

0Inner Model

Block	Mean	Location	Mult.RSq	AvResVar	AvCommun	AvRedund
BEHVca	0.0000	0.0000	0.2587	0.2424	0.7576	0.1960
BI	0.0000	0.0000	0.4506	0.2885	0.7115	0.3206
ATT1	0.0000	0.0000	0.0572	0.4734	0.5266	0.0301
ATT2	0.0000	0.0000	0.0633	0.4197	0.5803	0.0367
SNORM	0.0000	0.0000	0.0000	0.3647	0.6353	0.0000
OTHERS	0.0000	0.0000	0.0000	0.5149	0.4851	0.0000
PBC	0.0000	0.0000	0.0000	0.4413	0.5587	0.0000
TXSY	0.0000	0.0000	0.0000	0.4083	0.5917	0.0000
TXAU	0.0000	0.0000	0.0000	0.5729	0.4271	0.0000
CnP	0.0000	0.0000	0.0000	0.4451	0.5549	0.0000
CnPeff	0.0000	0.0000	0.0000	0.3834	0.6166	0.0000
DSTa	0.0000	0.0000	0.0000	0.2986	0.7014	0.0000
DSTb	0.0000	0.0000	0.0000	0.3163	0.6837	0.0000
DSTc	0.0000	0.0000	0.0000	0.2619	0.7381	0.0000
DSTd	0.0000	0.0000	0.0000	0.3773	0.6227	0.0000
Average			0.0553	0.4172	0.5828	0.0280

0Outer Model

Variable	Weight	Loading	Location	ResidVar	Communal	Redundan
BEHVca	outward					
BEH1	0.6105	0.8880	0.0000	0.2115	0.7885	0.2040
BEH2	0.5371	0.8525	0.0000	0.2733	0.7267	0.1880
BI	outward					
B11	0.5048	0.7942	0.0000	0.3693	0.6307	0.2842
BI2	0.6731	0.8901	0.0000	0.2077	0.7923	0.3570
ATT1	outward					
CIVIC	0.4099	0.7227	0.0000	0.4777	0.5223	0.0299
MORAL	0.6240	0.8863	0.0000	0.2146	0.7854	0.0449
GUILT	0.2891	0.5216	0.0000	0.7279	0.2721	0.0156
ATT2	outward					
COPun	0.3388	0.5990	0.0000	0.6412	0.3588	0.0227
SOPun	0.3264	0.7518	0.0000	0.4348	0.5652	0.0358
CODet	0.6104	0.9037	0.0000	0.1832	0.8168	0.0517
SNORM	outward					
SNORM1	0.3892	0.7694	0.0000	0.4081	0.5919	0.0000
SNORM2	0.3411	0.7774	0.0000	0.3956	0.6044	0.0000
SNORM3	0.5168	0.8424	0.0000	0.2903	0.7097	0.0000
OTHERS	outward					
OTH1	0.3393	0.6267	0.0000	0.6072	0.3928	0.0000
OTH3	0.1425	0.4533	0.0000	0.7945	0.2055	0.0000
OTH4	0.3094	0.7566	0.0000	0.4275	0.5725	0.0000
OTH5	0.5569	0.8774	0.0000	0.2303	0.7697	0.0000
PBC	outward					
PBC1	0.7846	0.9495	0.0000	0.0984	0.9016	0.0000
PBC2	-0.0460	0.4899	0.0000	0.7600	0.2400	0.0000
PBC3	0.3796	0.7310	0.0000	0.4656	0.5344	0.0000
TXSY	outward					
TXSY2	-0.5021	-0.6527	0.0000	0.5740	0.4260	0.0000
TXSY4	0.7724	0.8703	0.0000	0.2426	0.7574	0.0000

```
 ------------------------------------------------------------------------
    TXAU      outward
 TXAU1         0.1631    0.4787    0.0000    0.7708    0.2292    0.0000
 TXAU2         0.2818    0.6738    0.0000    0.5459    0.4541    0.0000
 TXAU3         0.5153    0.8117    0.0000    0.3412    0.6588    0.0000
 TXAU4         0.2231    0.6037    0.0000    0.6355    0.3645    0.0000
 TXAU5         0.1842    0.6885    0.0000    0.5260    0.4740    0.0000
 TXAU6         0.0846    0.6182    0.0000    0.6178    0.3822    0.0000
 ------------------------------------------------------------------------
    CnP       outward
 CnP3          0.3438    0.7534    0.0000    0.4324    0.5676    0.0000
 CnP4          0.2302    0.7997    0.0000    0.3604    0.6396    0.0000
 CnP6          0.1386    0.6589    0.0000    0.5659    0.4341    0.0000
 CnP1          0.2793    0.7350    0.0000    0.4598    0.5402    0.0000
 CnP2          0.3380    0.7699    0.0000    0.4072    0.5928    0.0000
 ------------------------------------------------------------------------
    CnPeff    outward
 CnPeff3       0.5853    0.8937    0.0000    0.2013    0.7987    0.0000
 CnPeff1       0.1932    0.5733    0.0000    0.6713    0.3287    0.0000
 CnPeff2       0.4309    0.8499    0.0000    0.2777    0.7223    0.0000
 ------------------------------------------------------------------------
    DSTa      outward
 DST6          0.7689    0.9381    0.0000    0.1199    0.8801    0.0000
 DST7          0.3854    0.7231    0.0000    0.4772    0.5228    0.0000
 ------------------------------------------------------------------------
    DSTb      outward
 DST12         0.9890    0.9999    0.0000    0.0002    0.9998    0.0000
 DST13         0.0184    0.6064    0.0000    0.6323    0.3677    0.0000
 ------------------------------------------------------------------------
    DSTc      outward
 DST5          0.5117    0.8231    0.0000    0.3224    0.6776    0.0000
 DST8          0.6476    0.8937    0.0000    0.2013    0.7987    0.0000
 ------------------------------------------------------------------------
    DSTd      outward
 DST11         0.8224    0.9310    0.0000    0.1332    0.8668    0.0000
 DST10         0.3808    0.6153    0.0000    0.6214    0.3786    0.0000
 ========================================================================
        ==PLSW no prob, eh?
CPU-Time =   0 min  0.05 sec
Total =      0 min  0.05 sec
        No errors reported.
```

Appendix 11: Discriminant Validity Coefficients (Taxpayer Sample)

Construct	**AVE**	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
1.BEHVp	0.895	**0.946**														
2. BI	0.649	0.558	**0.806**													
3. ATT1	0.663	0.473	0.604	**0.814**												
4. ATT2	0.607	0.401	0.346	0.319	**0.779**											
5. SNORM	0.622	0.407	0.518	0.596	0.308	**0.789**										
6. OTHERS	0.512	0.263	0.411	0.371	0.323	0.330	**0.716**									
7. PBC	0.758	0.532	0.460	0.455	0.424	0.477	0.324	**0.871**								
8. TXSY	0.457	0.301	0.380	0.273	0.186	0.350	0.298	0.299	**0.676**							
9. TXAU	0.612	0.182	0.285	0.339	0.077	0.245	0.440	0.235	0.313	**0.782**						
10. CnP	0.552	0.326	0.305	0.368	0.251	0.251	0.435	0.296	0.245	0.524	**0.743**					
11. CnPeff	0.532	0.249	0.285	0.078	0.159	0.245	-0.023	0.276	0.033	-0.004	0.285	**0.729**				
12. DSTa	0.687	0.214	0.327	0.419	0.224	0.213	0.210	0.308	0.111	0.365	0.306	0.193	**0.829**			
13. DSTb	0.825	0.192	0.323	0.346	0.056	0.192	0.334	0.222	0.281	0.669	0.520	0.017	0.478	**0.909**		
14. DSTc	0.749	0.190	0.254	0.340	0.075	0.201	0.279	0.115	0.144	0.368	0.549	0.189	0.348	0.541	**0.865**	
15. DSTd	0.619	0.347	0.361	0.475	0.153	0.281	0.246	0.166	0.244	0.292	0.446	0.138	0.430	0.401	0.452	**0.787**

Note: The diagonal elements represents the square root of average variance extracted (AVE) between the constructs and their measures. The off-diagonal highlighted above are correlations between constructs. For discriminant validity, diagonal elements should be larger than off-diagonal elements in the corresponding row and column.

Appendix 12: Discriminant Validity Coefficients (Tax Agent Sample)

Discriminant validity coefficients (Tax Agent Sample)

Construct	**AVE**	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
1. BEHV	0.758	**0.871**														
2. B I	0.712	0.367	**0.844**													
3. ATT1	0.527	0.381	0.617	**0.726**												
4. ATT2	0.580	0.153	0.093	0.152	**0.762**											
5. SNORM	0.635	0.088	0.324	0.262	0.278	**0.797**										
6.OTHERS	0.485	0.070	0.270	0.177	0.200	0.323	**0.696**									
7. PBC	0.559	0.313	0.279	0.295	0.296	0.351	0.240	**0.747**								
8. TXSY	0.592	0.046	0.187	0.206	-0.016	0.051	0.045	0.007	**0.769**							
9. TX AU	0.427	0.151	0.260	0.181	-0.164	0.080	-0.039	0.081	0.308	**0.653**						
10. CnP	0.555	0.149	0.140	0.179	-0.009	0.184	0.044	0.082	0.250	0.326	**0.745**					
11.CnPeff	0.617	-0.039	-0.014	-0.122	0.245	0.132	0.111	-0.110	-0.075	-0.278	0.191	**0.785**				
12. DSTa	0.700	0.094	0.315	0.229	0.130	0.127	0.114	0.252	0.103	0.276	0.227	-0.034	**0.837**			
13. DSTb	0.684	-0.104	0.087	0.074	-0.180	0.069	0.012	-0.061	0.211	0.368	0.378	-0.087	0.206	**0.827**		
14. DSTc	0.738	-0.091	0.166	0.113	-0.137	0.097	0.035	-0.048	0.089	0.358	0.437	-0.020	0.256	0.577	**0.859**	
15. DSTd	0.623	0.224	0.360	0.510	0.038	0.298	0.220	0.144	0.190	0.097	0.334	0.005	0.153	0.225	0.221	**0.789**

Note: The diagonal elements represents the square root of average variance extracted (AVE) between the constructs and their measures. The off-diagonal elements highlighted above are correlations between constructs. For discriminant validity, diagonal elements should be larger than off-diagonal elements in the corresponding row and column.

Appendix 13: Outer Model Loadings and Cross Loadings (Taxpayer Sample)

Loadings and Cross Loadings for the Measurement Model (TaxPayer Sample)															
	BEH	B1	ATT1	ATT2	SNORM	PBC	OTHERS	TXSY	TXAU	CnP	CnPeff	DSTa	DSTb	DSTc	DSTd
BEH1	**0.944**	0.518	0.462	0.374	0.401	0.501	0.259	0.258	0.167	0.315	0.247	0.178	0.195	0.152	0.303
BEH2	**0.948**	0.537	0.432	0.385	0.369	0.505	0.238	0.310	0.176	0.303	0.224	0.227	0.168	0.207	0.353
BI1	0.269	**0.705**	0.406	0.244	0.361	0.245	0.391	0.225	0.328	0.172	0.063	0.190	0.293	0.097	0.172
BI2	0.578	**0.895**	0.553	0.310	0.466	0.462	0.305	0.368	0.176	0.300	0.342	0.318	0.247	0.278	0.375
CIVIC	0.351	0.464	**0.829**	0.224	0.496	0.379	0.251	0.260	0.266	0.342	0.052	0.323	0.302	0.251	0.432
MORAL	0.426	0.503	**0.824**	0.251	0.554	0.368	0.262	0.207	0.251	0.192	0.070	0.367	0.238	0.260	0.464
GUILT	0.379	0.505	**0.789**	0.300	0.414	0.362	0.384	0.199	0.305	0.351	0.070	0.333	0.299	0.313	0.275
COPun	0.064	0.049	0.248	**0.513**	0.149	0.267	0.109	0.048	0.112	0.079	0.002	0.289	0.095	0.053	-0.017
SOPun	0.385	0.336	0.274	**0.883**	0.268	0.360	0.215	0.118	0.065	0.218	0.124	0.135	0.032	-0.004	0.126
CODet	0.351	0.300	0.272	**0.882**	0.278	0.378	0.368	0.221	0.057	0.235	0.173	0.227	0.053	0.134	0.163
SNORM1	0.422	0.486	0.573	0.350	**0.883**	0.420	0.256	0.325	0.162	0.182	0.244	0.165	0.130	0.157	0.299
SNORM2	0.296	0.399	0.396	0.217	**0.801**	0.484	0.255	0.261	0.213	0.265	0.182	0.196	0.176	0.143	0.121
SNORM3	0.214	0.322	0.428	0.125	**0.668**	0.192	0.285	0.233	0.226	0.147	0.141	0.144	0.160	0.187	0.240
PBC1	0.555	0.494	0.451	0.437	0.501	**0.930**	0.317	0.289	0.237	0.228	0.245	0.277	0.198	0.089	0.165
PBC2	0.372	0.224	0.309	0.251	0.349	**0.835**	0.189	0.222	0.135	0.203	0.283	0.217	0.124	0.090	0.078
PBC3	0.426	0.422	0.400	0.377	0.367	**0.845**	0.312	0.260	0.219	0.340	0.211	0.301	0.243	0.125	0.170
OTH1	0.267	0.365	0.356	0.232	0.298	0.329	**0.832**	0.325	0.418	0.376	-0.040	0.198	0.294	0.256	0.212
OTH3	0.080	0.257	0.186	0.184	0.195	0.119	**0.645**	0.173	0.270	0.269	0.051	-0.003	0.197	0.266	0.141
OTH4	0.134	0.261	0.183	0.153	0.167	0.230	**0.676**	0.221	0.366	0.218	-0.176	0.176	0.279	0.053	0.083
OTH5	0.243	0.279	0.308	0.355	0.267	0.220	**0.694**	0.104	0.185	0.366	0.100	0.212	0.179	0.212	0.255
TXSY2	0.212	0.307	0.164	0.168	0.301	0.184	0.100	**0.783**	-0.024	0.093	0.090	-0.011	0.054	0.053	0.143

TXSY4	0.197	0.197	0.216	0.072	0.156	0.232	0.342	**0.548**	0.534	0.268	-0.068	0.193	0.377	0.160	0.199
TXAU1	0.138	0.234	0.348	0.072	0.173	0.104	0.380	0.217	**0.671**	0.411	-0.104	0.320	0.503	0.392	0.308
TXAU2	0.162	0.312	0.322	0.045	0.223	0.189	0.332	0.291	**0.857**	0.485	0.030	0.292	0.583	0.332	0.325
TXAU3	0.105	0.215	0.194	0.042	0.156	0.222	0.314	0.233	**0.783**	0.281	0.034	0.305	0.484	0.149	0.208
TXAU4	0.187	0.157	0.170	0.088	0.178	0.164	0.295	0.243	**0.719**	0.383	0.062	0.199	0.362	0.171	0.088
TXAU5	0.167	0.201	0.304	0.141	0.260	0.253	0.430	0.257	**0.858**	0.460	-0.034	0.310	0.573	0.331	0.235
TXAU6	0.065	0.167	0.190	-0.055	0.127	0.173	0.296	0.201	**0.786**	0.397	-0.004	0.277	0.638	0.323	0.122
CnP1	0.177	0.214	0.203	-0.010	0.197	0.192	0.246	0.181	0.455	**0.656**	0.192	0.166	0.456	0.503	0.299
CnP2	0.279	0.287	0.351	0.110	0.272	0.272	0.394	0.214	0.571	**0.703**	0.109	0.238	0.503	0.469	0.352
CnP3	0.237	0.203	0.255	0.259	0.109	0.187	0.301	0.161	0.337	**0.826**	0.197	0.177	0.318	0.363	0.275
CnP4	0.310	0.267	0.327	0.300	0.218	0.267	0.390	0.226	0.339	**0.860**	0.323	0.272	0.331	0.365	0.378
CnP6	0.159	0.136	0.175	0.174	0.127	0.153	0.233	0.105	0.277	**0.642**	0.230	0.286	0.409	0.439	0.369
CnPeff1	0.064	-0.015	0.008	0.105	-0.008	0.110	-0.057	-0.041	0.049	0.177	**0.500**	0.023	0.020	0.116	0.036
CnPeff2	0.258	0.276	0.086	0.171	0.249	0.304	0.019	-0.006	-0.031	0.280	**0.927**	0.193	0.008	0.220	0.088
CnPeff3	0.161	0.278	0.049	0.050	0.214	0.121	-0.064	0.130	0.017	0.146	**0.699**	0.154	0.020	0.033	0.194
DST6	0.130	0.310	0.334	0.163	0.197	0.253	0.200	0.122	0.251	0.189	0.116	**0.739**	0.369	0.151	0.328
DST7	0.212	0.257	0.366	0.206	0.169	0.265	0.164	0.077	0.344	0.302	0.192	**0.911**	0.426	0.381	0.385
DST12	0.175	0.308	0.349	0.064	0.185	0.237	0.329	0.269	0.698	0.549	0.070	0.456	**0.909**	0.537	0.366
DST13	0.174	0.278	0.279	0.037	0.164	0.167	0.279	0.241	0.518	0.397	-0.039	0.413	**0.909**	0.447	0.363
DST5	0.157	0.308	0.287	0.087	0.169	0.151	0.233	0.159	0.226	0.430	0.153	0.297	0.397	**0.852**	0.385
DST8	0.172	0.138	0.300	0.044	0.178	0.053	0.250	0.094	0.404	0.517	0.173	0.305	0.534	**0.879**	0.398
DST10	0.197	0.134	0.223	0.018	0.117	0.145	0.167	0.187	0.316	0.520	0.185	0.246	0.478	0.533	**0.661**
DST11	0.330	0.386	0.479	0.186	0.293	0.127	0.217	0.203	0.189	0.265	0.068	0.408	0.232	0.265	**0.895**

Note: Going across, all measures must load higher on its own corresponding construct than other constructs. Going down, the measures associated with a construct must display higher loadings than the other measures.

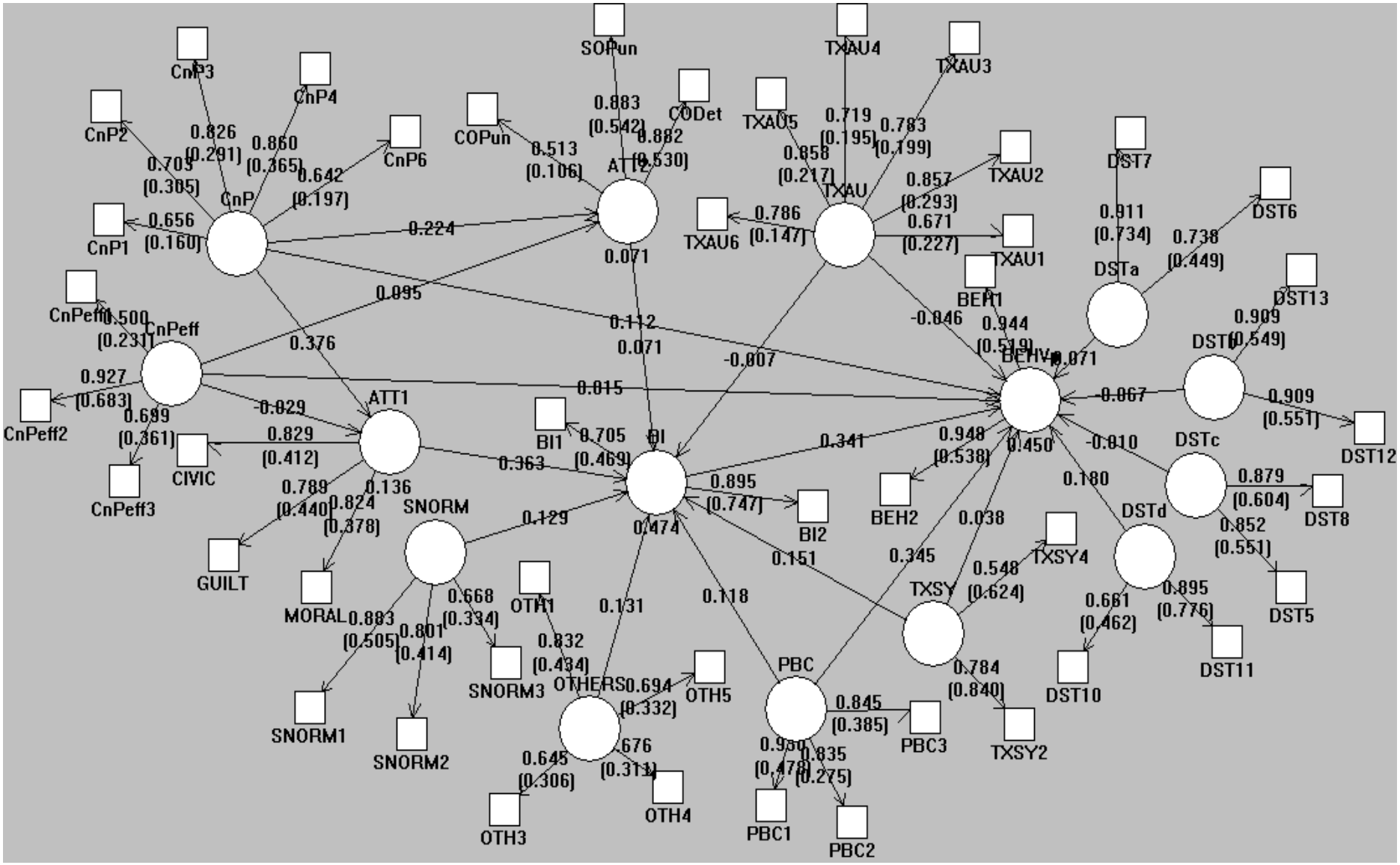
Appendix 14: Outer Model Loadings and Cross Loadings (Tax Agent Sample)

Loadings and Cross Loadings for the Measurement Model (Tax Agent Sample)															
	BEHV	BI	ATT1	ATT2	SNORM	OTHERS	PBC	CnPeff	DSTa	DSTb	DSTc	DSTd	CnP	TXAU	TXSY
BEH1	**.888**	.361	.330	.139	.048	.061	.323	-.020	.103	-.145	-.059	.189	.128	.095	.089
BEH2	**.853**	.272	.335	.126	.108	.060	.216	-.051	.060	-.029	-.102	.202	.132	.173	-.017
B11	.193	**.794**	.466	.031	.304	.201	.215	-.040	.202	.097	.098	.273	.022	.182	.123
BI2	.400	**.890**	*.567*	.115	.254	.251	.254	.010	.316	.057	.173	.330	.191	.250	.186
CIVIC	.118	.378	**.723**	.116	.286	.137	.232	-.068	.170	.116	.098	.369	.170	.188	.232
MORAL	.445	.623	**.886**	.116	.155	.153	.237	-.069	.208	.046	.106	.489	.147	.126	.150
GUILT	.190	.254	**.522**	.110	.167	.088	.180	-.176	.102	-.008	.024	.184	.060	.088	.060
COPun	-.015	.056	-.047	**.599**	.091	.085	.059	.138	-.024	-.135	-.036	.021	-.007	-.145	.062
SOPun	.248	.130	.183	**.752**	.213	.155	.393	.113	.206	-.123	-.192	.052	.026	-.077	-.162
CODet	.126	.052	.176	**.904**	.291	.198	.243	.264	.116	-.153	-.102	.023	-.025	-.148	.026
Snorm1	.138	.236	.182	.167	**.769**	.198	.168	.025	.062	.072	.075	.138	.213	.157	.057
Snorm2	.047	.207	.108	.166	**.777**	.186	.225	.135	.102	.156	.133	.224	.100	.069	.082
Snorm3	.035	.313	.300	.303	**.842**	.353	.405	.148	.132	-.023	.044	.324	.130	-.008	.000
OTH1	.150	.169	.096	.243	.229	**.627**	.197	-.026	.199	.064	.047	.138	.024	.091	.048
OTH3	.033	.071	-.002	.241	.129	**.453**	.121	.266	-.120	-.043	-.031	.039	.067	-.278	-.049
OTH4	.022	.154	.118	.040	.191	**.757**	.163	-.085	.111	.021	-.011	.193	-.070	.080	.097
OTH5	.013	.278	.194	.126	.301	**.877**	.189	.194	.052	-.018	.047	.194	.086	-.098	.010
PBC1	.352	.255	.294	.305	.340	.222	**.950**	-.089	.211	-.102	-.069	.137	.023	.081	-.002
PBC2	.037	-.079	.128	.234	.204	.097	**.490**	-.078	.075	-.005	-.058	.079	.046	-.063	-.016
PBC3	.103	.199	.185	.179	.249	.184	**.731**	-.117	.237	.051	.009	.106	.173	.040	.021
CnPeff1	.036	-.004	-.008	.108	.054	.078	-.188	**.573**	.047	.152	.140	.153	.398	.033	.086

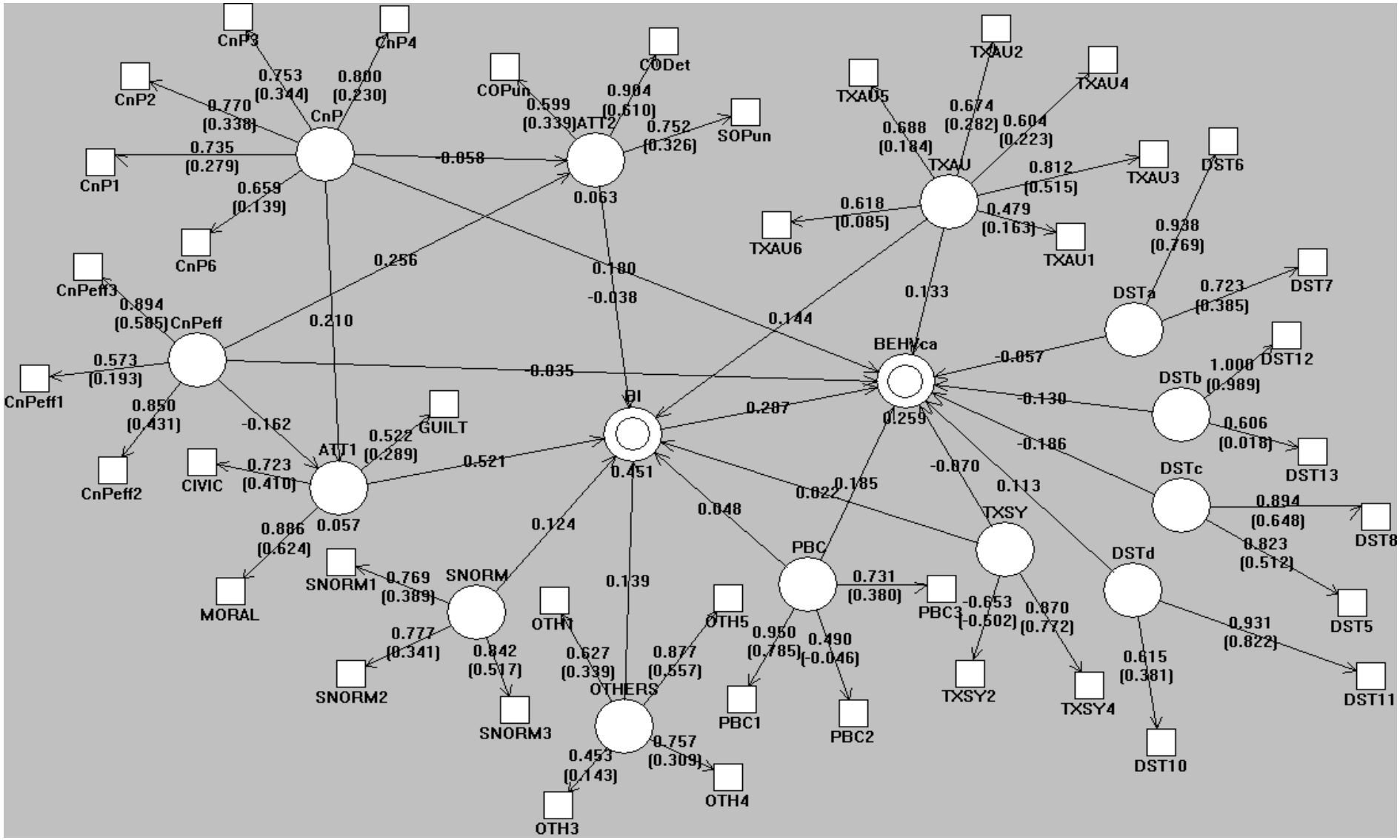
CnPeff2	-.040	.013	-.129	.167	.123	.073	-.087	**.850**	-.026	-.048	-.007	.034	.207	-.232	-.092
CnPeff3	-.049	-.032	-.110	.260	.117	.110	-.063	**.894**	-.055	-.163	-.076	-.067	.043	-.315	-.088
DST6	.098	.260	.214	.104	.118	.055	.228	-.031	**.938**	.144	.245	.096	.179	.269	.106
DST7	.049	.299	.168	.129	.094	.187	.200	-.026	**.723**	.248	.176	.204	.231	.181	.056
DST12	-.105	.084	.070	-.180	.067	.010	-.060	-.087	.203	**1.000**	.574	.224	.375	.365	.208
DST13	-.002	.218	.215	-.092	.185	.125	-.067	-.030	.310	**.606**	.489	.187	.385	.351	.235
DST5	-.068	.185	.098	-.129	.108	.029	-.056	.011	.263	.502	**.823**	.211	.385	.290	.098
DST8	-.086	.110	.098	-.109	.065	.031	-.030	-.040	.187	.494	**.894**	.175	.371	.324	.060
DST10	.104	.095	.331	.080	.195	.185	.087	.028	.043	.191	.193	**.615**	.389	.029	.191
DST11	.224	.394	.466	.009	.271	.182	.135	-.006	.166	.185	.180	**.931**	.226	.104	.142
CnP1	.107	.176	.131	-.043	.164	.025	.041	.180	.209	.237	.355	.257	**.735**	.183	.161
CnP2	.107	.163	.180	.028	.152	.077	.068	.174	.123	.351	.403	.279	**.770**	.305	.216
CnP3	.194	.079	.111	-.006	.160	.069	.154	.038	.210	.212	.252	.241	**.753**	.308	.170
CnP4	.098	.010	.101	-.012	.095	-.026	-.029	.179	.172	.293	.300	.233	**.800**	.191	.184
CnP6	-.042	.043	.144	-.013	.074	-.050	.009	.201	.110	.381	.331	.225	**.659**	.156	.227
TXAU1	-.004	.125	.081	-.234	-.007	-.146	-.215	-.197	.207	.399	.462	.037	.260	**.479**	.220
TXAU2	.154	.123	.049	.038	.032	-.091	.087	-.149	.225	.095	.185	-.012	.209	**.674**	.173
TXAU3	.135	.309	.248	-.128	.108	.113	.167	-.217	.156	.258	.183	.102	.171	**.812**	.268
TXAU4	.089	.116	.091	-.194	.066	-.094	.015	-.196	.269	.338	.377	.157	.370	**.604**	.195
TXAU5	.098	.082	.001	-.068	.021	-.110	.037	-.212	.091	.121	.084	-.029	.119	**.688**	.131
TXAU6	.004	.061	.069	-.183	-.016	-.076	-.050	-.114	.258	.532	.430	.144	.370	**.618**	.215
TXSY2	.029	-.124	-.142	.021	-.078	-.023	.087	.030	-.047	-.080	-.043	-.087	-.158	-.188	**-.653**
TXSY4	.078	.161	.174	-.007	.015	.044	.066	-.077	.102	.221	.087	.189	.221	.277	**.870**

Note: Going across all measures must load higher on its own corresponding construct than other constructs. Going down,the measures associated with a construct must display higher loadings than the other measures.

Appendix 15: Results of the Structural Model (Taxpayer Sample)



Appendix 16: Results of the Structural Model (Tax Agent Sample)



Appendix 17: Descriptive Statistics (Taxpayer Sample)

Descriptive Statistics Taxpayer

Measures	N	Minimum	Maximum	Mean	Std. Deviation
VI	180	1.00	7.00	4.0333	2.40785
V2	180	-.01	3.00	1.1641	.45965
V3	180	-.38	7.00	1.4381	1.20756
V4	180	1.00	7.00	3.3135	2.03904
V5	180	1.00	7.00	3.4049	2.14750
V6	180	1.00	7.00	2.8986	1.27217
V7	180	1.00	7.00	2.2778	1.17257
V8	180	1.00	7.00	3.0611	2.01991
V9	180	1.00	7.00	3.1889	2.12405
V10	180	1.00	7.00	3.9629	2.00738
V11	180	1.00	7.00	3.0734	2.06876
V12	180	1.00	7.00	2.6833	1.99853
V13	180	1.00	7.00	2.1778	1.63808
V14	180	1.00	7.00	2.0425	1.39770
V15	180	1.00	7.00	3.3833	2.03674
V16	180	1.00	7.00	2.6451	1.42772
V17	180	1.00	7.00	1.6333	1.16226
V18	180	1.00	7.00	2.2944	1.97101
V19	180	1.00	7.00	4.0438	1.95319
V20	180	1.00	7.00	2.9214	1.99765
V21	180	1.00	7.00	1.9396	1.50391
V22	180	1.00	7.00	1.9373	1.61214
V23	180	1.00	7.00	2.5056	1.99300
V24	180	1.00	9.00	2.7967	1.93889
V25	180	1.00	7.00	2.5500	1.96129
V26	180	1.00	7.00	2.9000	1.92919
C27	180	1.00	7.00	3.5222	2.12318
V28	180	1.00	7.00	2.7778	1.93340
SVA1	180	1.00	6.00	3.6111	1.01050
SVA2	180	1.00	6.00	4.0444	.98493
SVA3	180	1.00	5.00	3.1000	1.25560
SVA4	180	1.00	5.00	3.8700	1.04672
SVA5	180	1.00	6.75	3.4327	1.20138
SVA6	180	1.00	5.00	2.0333	1.08262
SVA7	180	1.00	5.00	2.8889	1.50563
SVB1	180	1.00	12.65	3.4919	1.82656
SVB2	180	1.00	7.00	2.6563	1.66847
SVB3	180	.94	7.00	4.3664	1.52120
SVB4	180	1.00	7.00	3.2403	1.60067
SVB5	180	-1.20	7.00	3.7812	2.06057
SVB6	180	1.00	7.00	5.7996	1.64461
SVB7	180	1.00	7.00	4.7784	2.08701
TxSy1	180	1.00	7.00	1.5389	.93572
TxSy2	180	1.00	7.00	1.7611	1.18823
TxSy3	180	1.00	7.00	1.9111	1.18316
TxSy4	180	1.00	7.00	5.5111	1.51155
TxSy5	180	1.00	7.00	5.1333	1.79197
PS1	180	1.00	7.00	2.4392	1.21534
PS2	180	.04	7.00	3.4558	1.92363
PS3	180	1.00	7.00	3.9824	1.70831
PS4	180	1.00	7.77	3.9639	1.67476
PS5	180	1.00	7.00	3.8361	1.59856
PS6	180	1.00	7.00	3.0789	1.63829
PS7	180	1.00	7.00	5.1833	1.55881
PS8	180	1.00	7.00	3.7008	1.99667

PS9	180	1.00	7.00	4.9737	1.66525
PS10	180	1.00	7.00	5.0598	1.59064
PS11	180	1.00	7.00	2.3889	1.37572
PS12	180	1.00	7.00	4.1288	1.76883
PS13	180	1.00	7.30	5.7248	1.36888
PS14	180	1.00	7.00	2.2167	1.33402
PS15	180	1.00	7.00	1.8222	1.29527
PS16	180	1.00	7.00	3.7690	1.83167
PS17	180	1.00	7.00	5.3388	1.43662
PS18	180	1.00	7.00	3.4482	1.89229
PS19	180	1.00	7.00	2.3398	1.25570
PS20	180	1.00	7.00	4.7559	1.61969
TXAU1	180	1.00	7.00	4.0664	1.70666
TXAU2	180	1.00	7.00	4.5103	1.75321
TXAU3	180	1.00	7.00	4.8854	1.71505
TXAU4	180	1.00	7.00	4.8141	1.71561
TXAU5	180	2.00	7.00	5.1155	1.66610
TXAU6	180	1.00	7.00	4.9937	1.63717
TXAU7	180	1.00	7.00	4.8496	1.66596
OTH1	180	1.00	7.00	5.4722	1.55147
OTH2	180	1.00	7.00	2.6444	1.56292
OTH3	180	1.00	7.00	4.9944	1.60828
OTH4	180	1.00	8.29	4.4850	1.93053
OTH5	180	1.00	7.00	4.4667	1.79197
OTH6	180	1.00	7.00	3.2500	1.75249
OTH7	180	1.00	7.00	5.4778	1.26162
OTH8	180	1.00	7.00	4.7444	1.55395
OTH9	180	1.00	7.00	4.4944	1.71584
OTH10	180	1.00	7.00	4.3000	1.68762
OTH11	180	1.00	7.00	2.6278	1.26416
GV1	180	1.00	7.00	1.6833	1.07003
GV2	180	1.00	7.00	3.4278	1.63082
GV3	180	1.00	7.00	4.4062	1.76377
GV4	180	1.00	5.00	1.7667	1.06283
GV5	180	1.00	7.00	3.0167	1.74482
GV6	180	1.00	7.00	2.8509	1.70764
GV7	180	1.00	7.00	2.8295	1.83645
GV8	180	1.00	7.00	4.1225	1.59546
GV9	180	2.00	7.02	5.6148	1.32123
GV10	180	1.00	7.00	5.2222	1.52542
GV11	180	1.00	7.00	2.6179	1.51119
GV12	180	1.00	7.00	4.4591	1.83075
GV13	180	1.00	7.00	3.8111	1.76176
Valid N (listwise)	180				

Appendix 18: Descriptive Statistics (Tax Agent Sample)

Descriptive Statistics Tax Agent

Measures	N	Minimum	Maximum	Mean	Std. Deviation
V1	164	1.00	7.00	2.2852	1.84674
V2	164	1.00	2.00	1.0162	.11335
V3	164	.55	7.00	1.1142	.61565
V4	164	1.00	7.00	4.0405	1.86817
V5	164	1.00	7.00	3.6821	2.28332
V6	164	1.00	6.00	2.6059	.97643
V7	164	1.00	7.00	2.5852	1.18314
V8	164	1.00	7.93	3.1877	1.92812
V9	164	1.00	7.00	2.2739	1.66545
V10	164	-.18	7.00	4.5156	2.01683
V11	164	1.00	7.00	3.8196	2.28271
V12	164	-1.29	7.00	3.2955	2.16242
V13	164	1.00	6.00	1.5334	.92358
V14	164	1.00	7.00	1.6463	.98429
V15	164	1.00	7.00	3.8205	1.93926
V16	164	1.00	7.00	2.6299	1.18868
V17	164	1.00	7.00	1.8878	1.49516
V18	164	1.00	7.00	2.9674	2.29679
V19	164	1.00	7.64	4.6900	1.83461
V20	164	1.00	7.00	2.1230	1.63780
V21	164	-.17	7.00	1.5389	1.25270
V22	164	1.00	7.00	1.3670	1.08933
V23	164	1.00	7.00	1.9398	1.33789
V24	164	1.00	7.00	2.5988	1.74154
V25	164	-.73	7.00	2.4009	1.87344
V26	164	1.00	7.00	3.2387	2.02982
V27	164	-.60	7.00	2.9799	1.93292
V28	164	1.00	7.00	2.3859	1.61097
SVA1	164	1.00	5.00	3.5488	1.14208
SVA2	164	1.00	5.00	2.8939	1.36482
SVA3	164	1.00	5.00	2.1280	1.05176
SVA4	164	1.00	5.00	3.4146	1.06766
SVA5	164	1.00	6.30	4.0079	.95375
SVA6	164	1.00	5.00	3.6159	1.00550
SVA7	164	1.00	5.00	4.0610	.91809
SVB1	164	1.00	7.00	5.0915	1.73670
SVB2	164	1.00	7.00	5.8608	1.46850
SVB3	164	1.00	7.00	3.2317	1.79159
SVB4	164	1.00	7.00	4.2500	1.88431
SVB5	164	1.00	7.00	3.4878	1.86504
SVB6	164	1.00	7.00	3.1463	1.61376
SVB7	164	-.17	7.00	2.9319	1.65286
TxSy1	164	1.00	4.00	1.3598	.55260
TxSy2	164	1.00	7.00	1.6890	1.18565
TxSy3	164	1.00	7.00	1.7988	1.16798
TXSy4	164	2.00	7.00	6.0915	1.15016
TxSy5	164	2.00	7.00	5.9878	1.07388
PS1	164	1.00	7.00	2.0881	1.05097
PS2	164	-3.24	7.00	4.0175	1.99116
PS3	164	1.00	7.00	3.6830	1.72834
PS4	164	1.00	7.00	3.6502	1.69408
PS5	164	1.00	7.00	3.5099	1.49794
PS6	164	1.00	7.00	3.2160	1.54690
PS7	164	1.00	7.00	4.9534	1.59326
PS8	164	1.00	7.00	5.1136	1.86597
PS9	164	1.00	7.00	4.3841	1.97033

PS10	164	-1.89	7.00	4.1120	1.74883
PS11	164	1.00	7.00	2.8299	1.53068
PS12	164	1.00	7.00	3.7714	1.69743
PS13	164	1.00	7.00	5.9878	1.02117
PS14	164	1.00	7.00	2.3415	1.40743
PS15	164	1.00	6.00	1.8145	1.20463
PS16	164	1.00	7.00	4.4123	1.76309
PS17	164	1.00	7.00	4.9573	1.60272
PS18	164	1.00	7.00	3.3419	1.66385
PS19	164	1.00	7.00	1.8354	.96107
PS20	164	1.00	7.00	5.1571	1.30015
PS21	164	1.00	7.00	2.9980	1.44460
PS22	164	-.43	7.00	2.4795	1.38430
TXAU1	164	1.00	7.00	3.8960	1.50530
TXAU2	164	1.00	7.00	4.1680	1.57953
TXAU3	164	1.00	7.00	4.4951	1.51489
TXAU4	164	1.00	7.00	3.8110	1.57266
TXAU5	164	1.00	7.00	3.9207	1.63544
TXAU6	164	1.00	7.00	4.5306	1.51239
TXAU7	164	2.00	7.00	4.9451	1.37575
OTH1	164	2.00	7.00	5.3232	1.32894
OTH2	164	1.00	7.00	3.0854	1.55237
OTH3	164	2.00	7.00	5.5122	1.20065
OTH4	164	1.00	7.00	4.5244	1.47557
OTH5	164	1.00	7.00	4.5703	1.49834
OTH6	164	1.00	7.00	3.0515	1.54417
OTH7	164	2.00	7.00	5.6853	1.06277
OTH8	164	1.00	7.00	4.0678	1.68724
OTH9	164	1.00	7.00	3.8110	1.60738
OTH10	164	1.00	7.00	4.5732	1.47811
OTH11	164	1.00	6.00	2.5038	.97043
GV1	164	1.00	7.00	1.9207	1.05659
GV2	164	1.00	7.00	2.9878	1.44421
GV3	164	1.00	7.00	4.1402	1.67217
GV4	164	1.00	5.00	1.6159	.71272
GV5	164	1.00	7.00	3.1707	1.65270
GV6	164	1.00	7.00	2.4889	1.32508
GV7	164	1.00	7.00	2.9512	1.61589
GV8	164	1.00	7.00	3.7988	1.44077
GV9	164	2.00	7.00	5.7256	1.07581
GV10	164	2.00	7.00	5.2768	1.51084
GV11	164	1.00	7.00	2.2845	1.19371
GV12	164	1.00	7.00	4.3188	1.60790
GV13	164	1.00	7.00	3.4146	1.62383
Valid N (listwise)	164				

Appendix 19: Glossary

ATO	-	Australian Tax Office
CPR	-	Compliance and Penalties Regime
DJT	-	Distributive Justice Theory
EVT	-	Expectancy-Value Theory
IRD	-	Inland Revenue Department
IRS	-	Internal Revenue Service
MPT	-	Motivational Posturing Theory
PLS	-	Partial Least Squares
PJT	-	Procedural Justice Theory
PMR	-	Process Model of Regulation
SCT	-	Self-Categorisation Theory
SEM	-	Structural Equation Modelling
TMR	-	Theory of Moral Reasoning
TRA	-	Theory of Reasoned Action
TPB	-	Theory of Planned Behaviour